
ARMY
INFORMATION
DIGEST
NOVEMBER 1958
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THE OFFICIAL U. S. ARMY MAGAZINE

ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, Army National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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THE NEW LOOK in Army firepower takes the form of missiles capable of providing accurate, all-weather atomic support to combat forces of the United States and its allies. In the Army's arsenal are the now-familiar shapes appearing left to right on front cover—the Sergeant, Little John, Redstone, Corporal, and Honest John. Weapons such as these add to the striking power of U. S. Army Missile Commands, as described in "Atomic Punch for the Ground Gainers."

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NG & USAR: Same as Active Army except allowance is one copy to each unit. For explanation of abbreviations used, see AR 320-50.

ARMY INFORMATION DIGEST

NOVEMBER 1958

Volume 13 Number 11

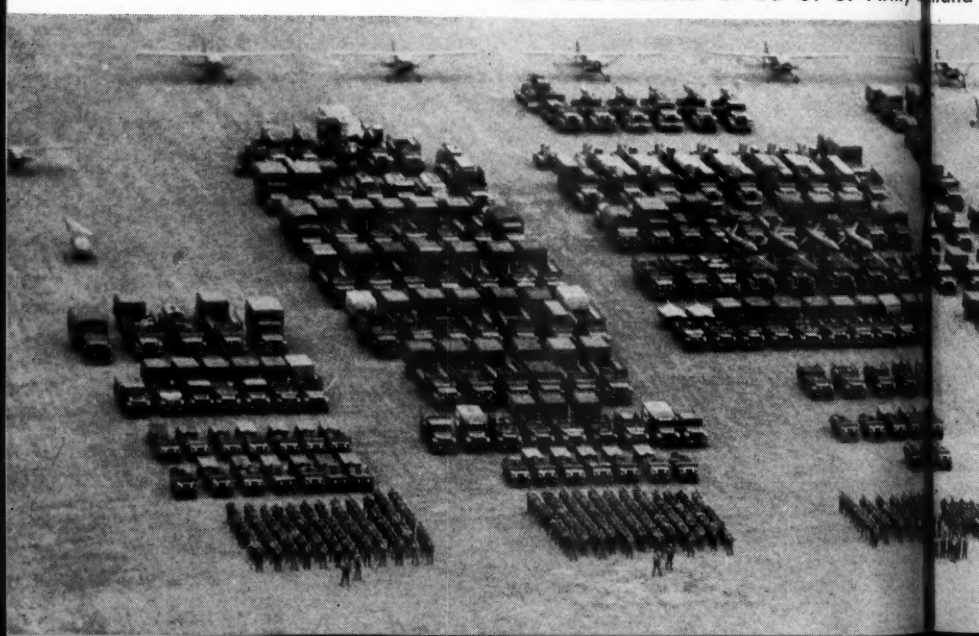
IN THIS ISSUE

IN BRIEF

Army Missile Commands speedily deliver

ATOMIC PUNCH for the GROUND GAINERS

Colonel George C. Dalia



Men and materiel of 3d U. S. Army mand

Army mand (Air Transportable) at Fort Bragg.

WITHIN the past year, the U.S. Army has introduced into its force structure a new and different type of combined arms organization — the United States Army Missile Command. Perhaps the best illustration of its need and purpose is provided by events leading to the establishment and deployment of the U. S. Army Southern European Task Force in Northern Italy. (See "SETAF—Pilot Organization for the Future," July 1958 DIGEST.)

In October 1955, the Western Powers and the Soviet Union withdrew their military forces from Austria. Prior to this withdrawal, the forward Allied position was located in Austria—a situation which gave the Allies capability of

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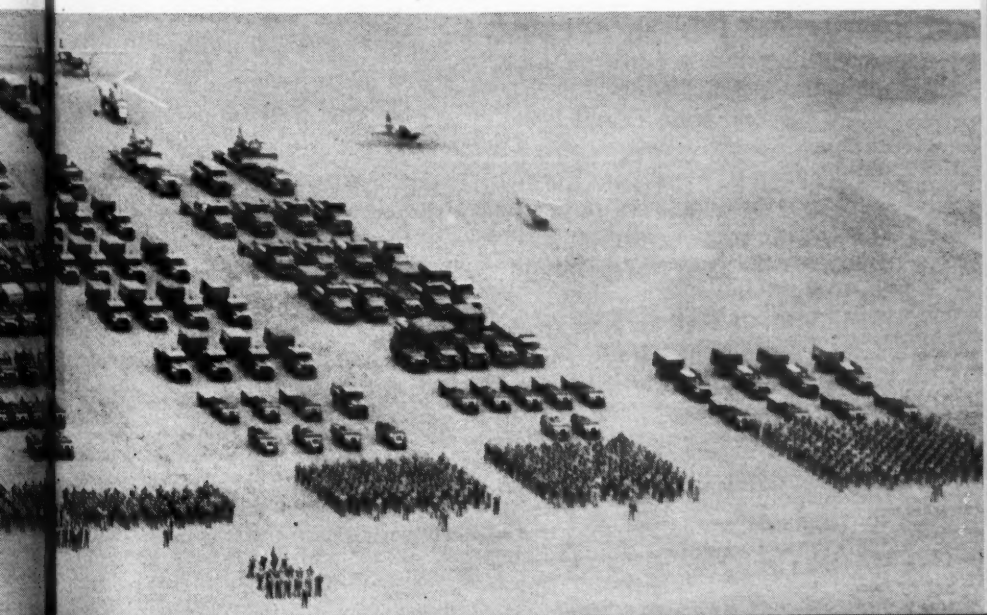
COLONEL GEORGE C. DALIA, Armor, Chief of Unit Organizations Branch, Office of the Deputy Chief of Staff for Military Operations, was Chief of G-3 Section, Southern European Task Force, during the first year of its existence.



delaying a major enemy advance until the defenses of Northern Italy and Western Austria could be adequately reinforced. After the withdrawal, the most forward position in the southern region held by NATO forces was the border of Northern Italy. As a result, the major avenues of approach to Southern Europe from the east were left open and unguarded. This, in a sense, created a vacuum in the defense of NATO's southern region.

Increasing the capability of the allied forces protecting the northernmost line in Southern Europe was essential. Two courses of action were open to the allied command. The first was to deploy additional conventional forces into the area, thereby assuring a strong defense at all times. Obviously, this would have been costly in men and materiel. The second was for the United States to provide a ground-delivery, all-weather capability of employing atomic firepower to assist in area defense.

To implement the latter preferred course of action, the Southern European Task Force (SETAF) was organized in October 1955 by Major General John H. Michaelis. SETAF was assigned to Allied Land Forces, Southern Europe, with the mission of providing atomic fire support to the forces defending the vital approaches into Northern Italy.

Initially, SETAF was organized along conventional lines. Major units included an infantry regiment, an artillery howitzer battalion, engineers, signal and service elements. For atomic fire, an Honest John unit was included in the command.

It was soon realized, however, that new concepts of organization were necessary. Although the command was organized as a combined arms unit, its primary unit was neither the infantry regiment nor the conventional artillery battalion. Actually the primary and only unit that had the capability of accomplishing the SETAF mission was one of the smallest in size but definitely the largest in fire power potential—the Honest John unit. This marked a new concept in the organization of a combined arms command—namely, that the fire unit and not the maneuvering unit was the principal element.

MISSILE commands were developed to provide accurate all-weather atomic firepower support to combat forces of the United States and its allies. Based on the experience gained from SETAF, the following factors were considered in developing the missile command organization:

- Atomic firepower delivery.
- Target acquisition.
- Communications.
- Security.
- Logistical support.
- Coordination with supported forces.

From analysis of these factors and the lessons learned by SETAF, the U. S. Army Missile Commands were developed and assigned the mission "To provide atomic fire to United States or allied forces in any area of the world."

ATOMIC FIREPOWER

TO INSURE effective support to the major elements of a type field army, delivery units were sought,

employing a highly mobile weapon that could provide tactical fire support to the division and its subordinate elements. Launchers and missiles or rockets in this category presently in the Army inventory or available in the near future include the 762mm Rocket—Honest John, and the 380mm Rocket—Little John.

A long-range artillery rocket, the 762mm Rocket—Honest John is capable of carrying either an atomic or non-atomic warhead. It is a free-flight rocket, as distinguished from a guided missile, with range equivalent to medium to long-range artillery. The weapons system consists of a rocket weighing several tons and a highly mobile self-propelled launcher.

The Little John is a 380mm rocket packing explosive power greater than heavy artillery. Simple and reliable, the system utilizes a solid propellant rocket engine. Lightweight launchers and ground equipment have extremely high mobility and are easily airlifted.

To provide effective support to a corps of three to four divisions, a medium-range missile that could cover the entire corps area of responsibility was required. For this purpose, the Corporal guided missile is currently available.

Equipped with either an atomic or non-atomic warhead, the Corporal can engage tactical targets at ranges of more than 75 miles, with the missile following a ballistic trajectory during most of its flight. Weather and visibility conditions do not restrict its use.

As a replacement for the Corporal, the Army is developing a new medium-range missile, the Sergeant. A solid propellant surface-to-surface ballistic guided missile, the Sergeant is 30 feet long and incorporates many improvements over the Corporal in accuracy, mobility and economy. It can deliver a nuclear blow deep in the enemy rear, and is invulnerable to any known enemy countermeasures. It is air-transportable and can be emplaced rapidly and fired in all conditions of weather and terrain by a comparatively small crew.

"Overall, the U. S. Army Missile Command has measurably increased the striking power of United States combat forces; moreover, it has enabled the United States to support its allies with a tremendous firepower at minimum cost in personnel."

For the overall support of a field army or an army group, a long-range tactical atomic missile is required, capable of destroying targets deep in enemy territory. In this category, the Redstone missile is capable of delivering either atomic or non-atomic projectiles at greater ranges than the Corporal or the Sergeant.

The Pershing, a solid propellant ballistic missile, will succeed the Redstone liquid propellant missile. The new missile will be smaller, lighter and more mobile than the Redstone and will provide the Army with a more versatile and flexible weapon with which to discharge its nuclear battlefield role.

TARGET ACQUISITION

FROM a tactical viewpoint, where targets are to be engaged by a ground force with conventional

"Based on the experience gained from SETAF, the following factors were considered in developing the missile command organization: atomic firepower delivery; target acquisition; communications; security; logistical support; coordination with supported forces."

and atomic weapons, the commander must have the means to acquire the necessary information to assure himself of a profitable target. This means that the unit must be organized and equipped to perform the information-gathering —*i.e.*, target acquisition—mission. This unit must locate targets deep in the enemy rear, both physically and electronically by devices such as radar, television and related equipment.

SIGNAL COMMUNICATIONS

THE breadth and depth of the nuclear battlefield, the complexity of operations incident to target acquisition and delivery of fire, the requirement for flexibility and responsiveness of the entire support system—all dictated that an effective, high capacity communications systems be incorporated into the proposed missile command organization. The communication system of necessity must be extensive, to match the broadened area of the modern battlefield.

SECURITY

THE vulnerability of missile units to ground attacks, the dispersed formation of supported units on the nuclear battlefield, and the fact that the situation might not permit delivery units to be located near elements of the supported units, indicated that a security or local defense capability should be incorporated within the missile command.

Besides possessing maximum ground mobility, this security force had to be organized and equipped to provide the maximum security with a minimum of personnel. Consideration was given to including an air defense element within the command; however, due to the requirements for area defense, it was felt that defense against air attacks must be provided by the supported force.

LOGISTICAL SUPPORT

ECONOMY of force dictated that the requirements for logistic and administrative support be kept to the minimum. Service elements, it was recognized, will vary greatly according to local requirements, geographic deployment, and location of other U. S. Forces. Further, this requirement could not be met at the expense of the tactical units.

In general, service support to an atomic force normally is kept to the minimum consistent with the provision of special weapons support, essential maintenance, transportation and other conventional support. But since missile commands are not logistically self-supporting, those operating for extended periods away from U. S. Forces must be heavily augmented with Technical Service units.

COORDINATION

IN developing a logical approach to an atomic force organization, one of the major considerations is

the requirement for coordination with the supported forces.

First. the atomic force commander must be of appropriate rank. Considerations in determining rank included the size of the force to be supported (division to an army group), the firepower potential of the atomic command and, finally, the fact that the unit may be the sole United States unit within an allied command.

Second, it was recognized that sufficient liaison personnel, qualified to provide sound tactical and technical advice to the supported force commander and his staff, are essential to the missile command. It can be assumed that the commander of the U. S. Force will be the principal advisor to the allied force commander on missile and atomic employment and, accordingly, liaison personnel must be capable of advising key staff personnel of the supported force.

TYPES OF MISSILE COMMANDS

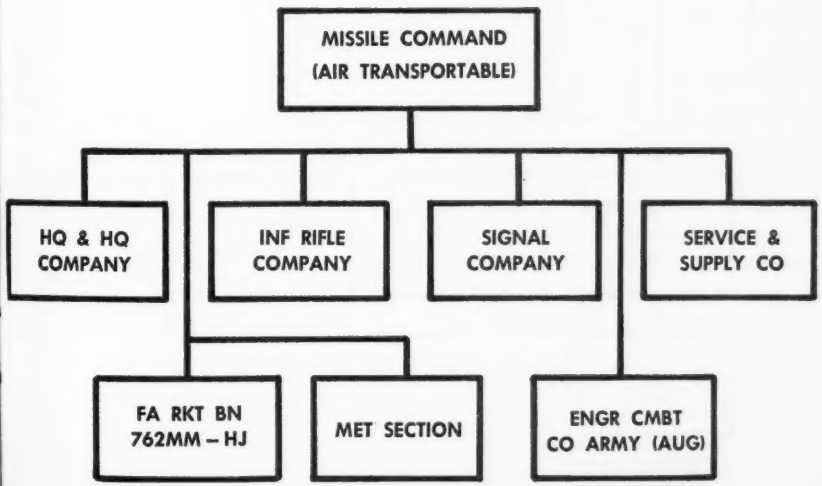
BASED on an evaluation of the foregoing factors, three types of missile commands were developed by the Department of the Army—the United States Army Missile Command (Air Transportable), United States Army Missile Command (Medium), and the United States Army Missile Command, (Heavy).

AIR TRANSPORTABLE MISSILE COMMAND

POSSESSING a fully air transportable capability, this command is a comparatively small organization designed primarily to furnish atomic fire at the division level. The command—with a total strength of approximately 1100—is built around one Honest John battalion.

The Honest John battalion, the *firepower element,* has four launchers and is capable of launching rockets with a variety of atomic warheads. A reconnaissance and surveillance platoon is included in the headquarters company charged with the *target acquisition* function. *Communications* are provided by the Signal Company. An

AIR TRANSPORTABLE COMMAND



infantry rifle company is included for the command *security* mission. A combat engineer company provides overall engineer support including camouflage, geodetic survey and other related support. For *logistical support,* the service and supply company includes a special weapons detachment, a chemical section for radiological detection and decontamination, and conventional service elements.

Currently located at Fort Bragg, North Carolina, the 3d U. S. Army Missile Command (Air Transportable) was activated in March 1957.

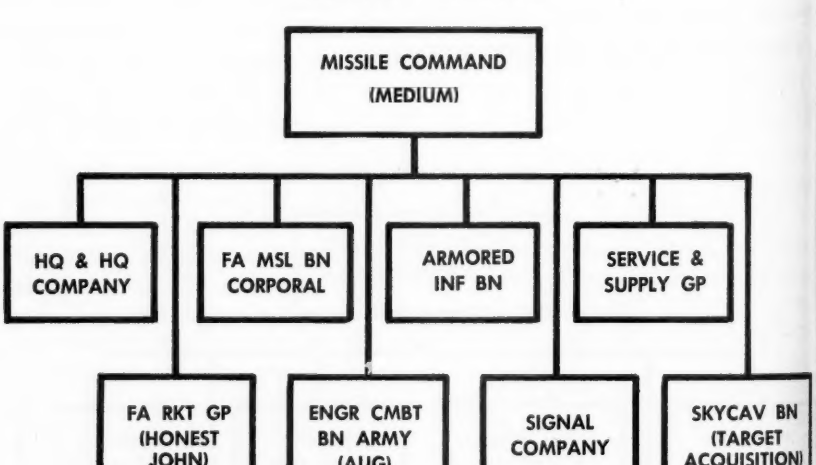
THE MEDIUM COMMAND

THE U. S. Army Missile Command (Medium) is flexible in organization and can be readily adjusted in size and composition for a given mission in a particular area of operation. The *firepower* units, the primary elements of the command, include a field artillery rocket group of four Honest John battalions and a Corporal battalion. With these, the command can furnish fire support to divisions, corps and field Army.

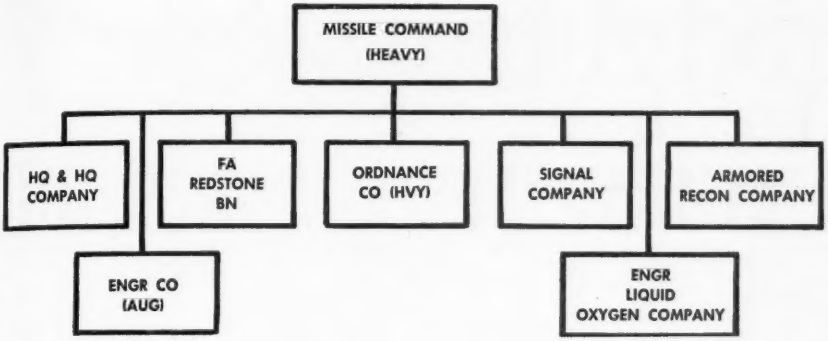
Possible variations in this command include a reduction in the number of Honest John battalions and the corresponding supporting troops, or the addition of a second Corporal battalion, when additional medium-range firepower is essential.

The *target acquisition* unit is the Sky Cavalry Battalion—largest Army unit organized primarily to accomplish this mission. The battalion will have the capability of performing reconnaissance and surveillance over wide fronts and

THE MEDIUM COMMAND



THE HEAVY COMMAND



extended distances through the use of a combination of troops, vehicles, aircraft, photographic equipment, electronic and detection devices.

The battalion has four Sky Cavalry companies, each similarly organized. In order to exploit to the maximum the destructive power of missiles and rockets, information on tactical targets must be obtained as rapidly as possible, followed by an immediate evaluation of results of atomic strikes. Effective operation of the Sky Cavalry battalion is thus vital to the successful operation of the command as a whole.

For local *security* an armored infantry battalion is included. This is a ROCAD armored infantry unit with the mission of protecting the special weapons and delivery units. A signal company provides wire, radio, photo and other related signal activities. The engineer combat battalion provides assistance in preparing missile sites, camouflage, survey and geodetic elements for locating the launcher sites. A service and supply group provides both conventional and special weapons logistical support. A chemical detachment is included for radiological survey and decontamination service. There is also an ordnance battalion to furnish special weapon warheads, missiles, and rockets.

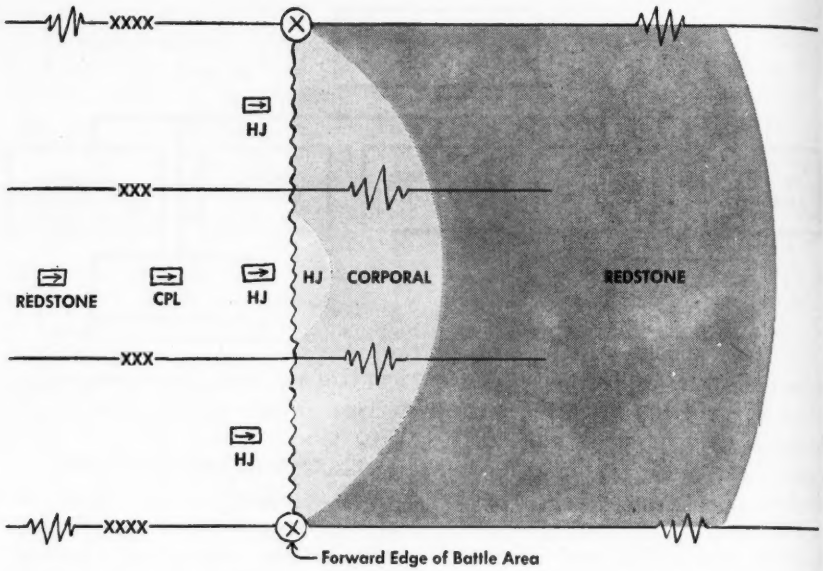
The medium command is the largest, most versatile and flexible organization that can furnish atomic firepower to the division, corps and possibly the field army.

Two medium missile commands have been activated—the 1st U. S. Army Missile Command (Medium) assigned to U. S. Army Southern European Task Force; and the 2d U. S. Army Missile Command (Medium) at Fort Hood, Texas.

HEAVY MISSILE COMMAND

THE U. S. Army Missile Command (Heavy) is built around the Redstone missile, with its long-range capability. It consists of approximately 1400 personnel. Primary element is the Redstone Battalion with two launchers, supported by an ordnance company with special weapons and conventional support; a LOX company (engineer liquid oxygen company); an augmented engineer company; a signal company for *communications;* and an armored reconnaissance company for local *security.* The *target acquisition* element,

FIELD ARMY IN DEFENSE



aviation support, chemical section and general supply section are included in headquarters company.

Elements of the heavy command could conceivably be incorporated into the medium command, particularly when there is a requirement for delivery of long-range atomic fire in addition to the Corporal.

OVERALL, the U. S. Army Missile Command has measurably increased the striking power of United States combat forces; moreover, it has enabled the United States to support its allies with a tremendous firepower at minimum cost in personnel.

The Army's missile commands, it must be fully understood, are designed to furnish fire support to organized conventional ground forces. They cannot be deployed as independent units since no ground-holding capability has been included within their organization. (Infantry and armored units are included primarily for local security purposes.) Even so, it should be fully appreciated that each type command possesses the capability of delivering accurate atomic firepower, regardless of weather or visibility conditions, whenever a situation requiring such action may arise.

MISSILE SCHOOL FACILITIES EXPANDED

THREE new classroom buildings and two large laboratory buildings have been added to the "Space Academy" at the Army Ordnance Guided Missile School, Redstone Arsenal, Alabama. The $5,000,000 additions containing equipment estimated as worth $20,000,000, bring to 90 the number now used by more than 3,000 students and faculty.

Recent graduates at the school include sixty officers and men of the Royal Danish Ordnance Corps and the Royal Norwegian Air Force.

Toward a Pentomic Reserve structure—

Reorganizing THE RESERVE COMPONENTS

Major General John W. Bowen

LAST SPRING the Secretary of the Army made a momentous decision which had as its objective the readjustment of the Reserve Components Troop Basis to a realistic and practical structure. Accordingly, on 31 March 1958 he announced plans to reorganize the Army's reserve components along Pentomic lines and to reduce the overall size of the reserve component troop structure to bring it in consonance with Department of Defense guidance, joint war plans and national military policy.

MAJOR GENERAL JOHN W. BOWEN is Assistant Chief of Staff for Reserve Components, Department of the Army.

In addition to other adjustments, this plan would have reduced the 37 combat divisions existing in the reserve components (27 Army National Guard and 10 U. S. Army Reserve) to a total of 27 combat divisions (21 Army National Guard and 6 U. S. Army Reserve). It was planned, then, to accomplish this reduction in division structure by the conversion of six Army National Guard infantry divisions to six combat support divisions, and in the Army Reserve by the conversion of four infantry divisions to four training commands.

Since that time the Secretary of Defense has modified previous guidance so that "the Army has

". . . The mission of the reserve components is to bridge the gap, in an emergency, with trained units and men between the Active Army and the point in time when new units can be created from untrained men."

been authorized to develop a plan looking toward the retention of the present 37 divisions in the Reserve Forces structure—that is, 27 Army National Guard divisions and 10 U. S. Army Reserve divisions—provided that this troop structure is maintained with no increase of cost or personnel beyond currently programmed levels."

The Chief of the National Guard Bureau and the Chief, Army Reserve and ROTC Affairs, in coordination with other agencies of the Army Staff and in consultation with the General Staff Committee on National Guard and Army Reserve Policy, have re-examined the reserve component troop structure and the plans for reorganization, looking toward the retention of all of the 37 existing reserve component combat divisions within the resources required for the 27-division structure. Based

DIVISIONS AFFECTED

ARMY NATIONAL GUARD

THE solution approved by the Secretary of the Army as a basis for proposing detailed troop lists to each of the States, Territories, Commonwealth of Puerto Rico and the District of Columbia contains 27 Army National Guard Divisions, 21 infantry and 6 armored. Five of the infantry divisions will be fully organized with all organic elements; 16 infantry divisions will be organized, less two battle groups. The six armored divisions will be fully organized.

The five Army National Guard infantry divisions and six Army National Guard armored divisions which are to be fully organized are:

26th Infantry Division	Massachusetts
28th Infantry Division	Pennsylvania
30th Infantry Division	North Carolina
32d Infantry Division	Wisconsin
38th Infantry Division	Indiana
27th Armored Division	New York
30th Armored Division	Tennessee
40th Armored Division	California
48th Armored Division	Georgia, Florida
49th Armored Division	Texas
50th Armored Division	New Jersey

ARMY RESERVE

THERE ARE 23 existing infantry division organizations in the U. S. Army Reserve. Under the new guidance, 10 of these divisions will be retained as combat divisions and 13 will be retained as divisions with a mobilization training mission.

The 10 combat divisions will be fully organized with six at a higher authorized strength than the other four. These 10 combat divisions are:

upon the advice of these studies, the Secretary of the Army has approved a plan for a new reserve component structure organized along Pentomic lines and retaining all of the 37 combat divisions.

The Secretary of the Army has authorized this new plan as a basis for proposing new Army National Guard troop allotments to each of the States, the Territories, the Commonwealth of Puerto Rico, and the District of Columbia. The Secretary has further authorized this new troop plan as the basis for distribution of Army Reserve units to each of the Army areas and the development of Army Commanders' plans for reorganization of the Army Reserve.

STRUCTURE OF THE RESERVE

THIS new troop structure is the outgrowth of a directive by the Secretary of the Army, given about a year and a half ago to the Army Staff, which called for an exhaustive review of the reserve components program to determine the adaptability and capability of the reserve components to perform their mission in this age of atomic weapons and to insure that the structure conformed to national policy and objectives.

By law, the Army consists of:

ORGANIZATION PLAN

77th	Infantry	Division	New York
79th	Infantry	Division	Pennsylvania
83d	Infantry	Division	Ohio
90th	Infantry	Division	Texas
102d	Infantry	Division	Missouri, Illinois
103d	Infantry	Division	Iowa, Minnesota
63d	Infantry	Division	California
81st	Infantry	Division	Tennessee, Georgia
94th	Infantry	Division	Massachusetts
96th	Infantry	Division	Montana, Idaho, Utah, Arizona

THE following 13 divisions will be organized under a special table of organization to accomplish their mobilization training mission:

70th	Infantry	Division	Michigan, Indiana
76th	Infantry	Division	Vermont, Connecticut, Maine, Rhode Island, New Hampshire
78th	Infantry	Division	New Jersey
80th	Infantry	Division	Maryland, Virginia, D. C
84th	Infantry	Division	Wisconsin
85th	Infantry	Division	Illinois
89th	Infantry	Division	Colorado, Kansas, Nebraska
91st	Infantry	Division	California
95th	Infantry	Division	Oklahoma, Arkansas, Louisiana
98th	Infantry	Division	New York
100th	Infantry	Division	Kentucky, West Virginia
104th	Infantry	Division	Washington, Oregon
108th	Infantry	Division	North Carolina, South Carolina

"Reorganization of the reserve components will result in an Army that is wholly responsive to basic national security policy and joint defense plans."

(1) the Regular Army, the Army National Guard of the United States, the Army National Guard while in the service of the United States, and the Army Reserve; and (2) all persons appointed or enlisted in, or conscripted into, the Army without component. (10 USC 3062 (c)).

The term "Reserve Components" is used to denote that part of the Army, not on continuous active service, which includes the Army National Guard of the United States and the Army Reserve. The law requires that the Army (including both its reserve components) be organized, trained and equipped for prompt and sustained combat and that it support national policies and implement national objectives.

A basic premise of all Army plans and programs stems from the concept that the Active Army, the Army National Guard of the United States and the Army Reserve are a composite entity. They are not three separate segments which become a whole only when joined together by some emergency. They must plan as one. They must organize and train as one, and in the event of aggression, they will fight as one.

PLANS for the mobilization and deployment of the Army's forces are based upon the Army requirements established by joint war plans—that is, joint war plans developed and approved by the Joint Chiefs of Staff. National policy limits the size of the military services to those forces which are required during the early months of an emergency and which cannot be created from Selective Service sources in sufficient time to meet the mobilization and deployment schedules.

Paraphasing the mission established by law, it can be said that the mission of the reserve components is to bridge the gap, in an emergency, with trained units and men between the Active Army and the point in time when new units can be formed from untrained men.

REQUIRED CHANGES

AS a result of the review of the reserve components directed by the Secretary of the Army, it became apparent that a reorganization was mandatory if the reserve components were to continue to fill their role and mission as an integral part of the Army.

The first requirement was the necessity to reorganize the reserve components under the Pentomic concept which has already been adopted in the Active Army. Federal law requires that the Army be organized, equipped and trained for prompt and sustained combat. This meant the adoption of a uniform organization to permit the integration of new weapons, weapons systems and training under new tactical concepts resulting from the new weapons.

The second requirement was the necessity to reduce the size of the structure to conform to national policy. National policy requires that all available resources be ap-

plied to those forces actually required during the early months of an emergency, pending the creation of new forces from untrained personnel after the onset of the emergency. By applying all our resources to the forces actually required, these units can be brought to a level of combat readiness to permit their deployment on an accelerated schedule.

However, under the old structure it was determined that approximately 25 percent of the company-size units were not required during the early months of mobilization, and they could be created as needed after the emergency developed. This meant that the Army was diluting its resources over a broad base of units, many of which were excess to requirements, thus preventing required priority forces from ever reaching the level of combat readiness required to meet mobilization and deployment schedules.

IN RECOGNITION of the requirement to readjust the structure of the reserve components to meet national policy and joint war plans, the Secretary of the Army has directed that this reorganization be implemented over a two-year period. The reorganization will result in a reduction of approximately 25 percent in the number of company-size units in the Army's reserve components.

Upon completion of this reorganization, the Army reserve components will consist of 37 combat divisions—27 in the Army National Guard (6 armored and 5 infantry divisions fully organized, and 16 infantry divisions organized less 2 battle groups) and 10 in the Army Reserve—and thousands of nondivisional company-size units organized into battalions, groups, training commands and other type organizations representing all arms and services. (*See page 12.*)

A priority system will be initiated whereby those units with the earliest mobilization times will receive preferential treatment in the assignment of personnel and equipment.

A basic premise of this reorganization is that there will not be a wholesale discharge of participating personnel. The maximum number of personnel from units that are eliminated will be reassigned to those units that are retained. Overstrengths in units will be authorized so that reductions can be reached through normal attrition. In addition, full utilization must be made of existing or programmed armories and other training facilities.

REORGANIZATION of the reserve components will result in an Army that is wholly responsive to basic national security policy and joint defense plans. Forces established in the new structure will be those required to meet Army missions in case of a national emergency. To retain the pre-existing organization of the reserve components would be for the Army to reject the incontrovertible facts of progress and evaluation in the conduct of military operations. The advantages resulting from these organizational changes will be threefold:

- A strengthening of the Army.
- A strengthening of the reserve components.
- A strengthening of national security.

The Army's new plan for

READY RESERVE REINFORCEMENT

A NEW Ready Reserve Reinforcement plan which spells out priorities and streamlines the recall of Army Reservists to active duty has been announced to meet requirements of the active Army, the Army National Guard of the United States and the Army Reserve in time of partial or total mobilization.

Generally, as described in Army Regulations 135-40, the plan provides that the last man out of active service will be the first recalled in time of mobilization. The policy recognizes that individuals most recently trained on active duty are best qualified—and have the least amount of Ready Reserve service.

Primarily affected are some 800,000 officer and enlisted persons in the Ready Reserve of the Army Reserve reinforcement pool. Not affected by the plan are about 280,000 members of Army Reserve units or those now having key mobilization assignments (mobilization designees). Members of Research and Development Training Detachments also are excluded.

THE plan is aimed at avoiding the breaking up of Reserve units, in that individual reinforcements will be the first to be ordered to active duty to fill out priority units. In some instances it will be possible under the plan to order up members of the Standby Reserve, but this will occur only on declaration of war or a national emergency declared by Congress.

Under the new procedures, the reservist will report directly to the unit to which assigned, rather than going through a reception center. Also eliminated is the current practice of predesignating an individual reinforcement to a unit of the active Army, Army National Guard of the United States, or Army Reserve. However, the reservist may volunteer for duty with a reserve component unit at any time.

Other features of the plan provide: a simpler and more rapid assignment of individual reinforcements where and when needed in the numbers and skills required; flexibility to commanders in furnishing reinforcements according to current and future missions and changes in the troop structure; a reporting system listing all individual reinforcements by current military occupation and grade; and an alternate system of recall in the event a major headquarters becomes ineffective.

ANNUAL MEETING—ASSOCIATION OF THE U. S. ARMY

THE ANNUAL MEETING of the Association of the U. S. Army, scheduled for 20-22 October at the Sheraton-Park Hotel, Washington, D. C., has as its theme "The United States Army, Ready for Action—Any Kind, Any Time, Any Place." Highlighting the Army's unique capabilities in warfare, more than 100 displays feature some of the Army's latest equipment and industrial developments in the military field, including experimental and prototype models.

ARMY TRENDS

RESEARCH ■ DEVELOPMENT ■ WEAPONRY ■ ORGANIZATION ■ TRAINING

CONVERGENCE OF FORCES. Key concepts of Army planners were brought sharply into focus on 15 July as U. S. Forces converged on the beaches outside Beirut, Lebanon, in an emergency action in support of peace and stability in the Middle East. In a suddenly arising situation described as "not war but like war," the U. S. Army was called on for rapid action which put to stringent test existing concepts of the Army's role in joint operations in situations short of actual war; the Army's capabilities for swift deployment in a threatening war situation; and the readiness status of units recently organized under Pentomic and STRAC concepts.

The crisis arose when revolting groups overthrew the pro-West government of Iraq. Beset by agents of indirect aggression, nearby Lebanon appealed to President Eisenhower for aid. On 15 July units of the 2d Marine Division were landed on Lebanon beaches under cover of ships of the U. S. Sixth Fleet. A Specified Command, Middle East was created to direct operations, with Adm. James L. Holloway, Jr., named as chief responsible to the Joint Chiefs of Staff.

Next day the 1st Airborne Battle Group, 187th Infantry, 24th U. S. Infantry Division was on its way. Airlifted by Air Force C-124 Globemasters from Germany to the NATO base at Adana, Turkey, the paratroopers were former members of the deactivated 11th Airborne Division, which had become part of the Pentomic 24th Division only two weeks before. Meanwhile, troops from the 101st Airborne Division—a Strategic Army Corps unit at Fort Campbell, Kentucky—were quickly moved to Europe to replace them.

On 19 July President Eisenhower addressed a radio message to troops of the Army, Navy and Air Force in Lebanon, stating in part:

> "You are in Lebanon because the United States has responded to an urgent request from Lebanon, a friendly country, for help in preserving its cherished independence which has been gravely threatened. Lebanon is a free nation—properly proud of its history and its traditions. The Lebanese people—like us—want only to live in peace and in freedom. They do not want to impose their will on any other people; they do not want to conquer or enslave any other nation.
>
> "But unfortunately their hopes and aspirations to remain free are now threatened. A large part of that threat comes from outside forces which have sent men and munitions into Lebanon to help in destroying its democratic government, based upon free popular elections.
>
> "Lebanon had no recourse but to appeal for assistance. Their President, with the unanimous approval of the Cabinet, asked me to help them maintain their independence. After careful consideration and consultation with the leaders of our Congress, I decided that the appeal for help had to be honored—that unless Lebanon received help, pending necessary enlarged United Nations support which could not be immediately furnished, it would cease to exist as a free and independent country.
>
> "You are helping the Lebanese people to remain free. You are there at their invitation—as friends—to preserve for them the same freedoms that we have here at home."

A follow-up report:

Brigadier General Frederick W. Gibb

The U. S. Army Combat Development Experimentation Center (CDEC) was less than six months old when the first article about its activities appeared in the June 1957 issue of ARMY INFORMATION DIGEST. The following article portrays the major advances in concepts, methods and results of experimentation since that time, and the basic philosophy of CDEC's approach to the problem of developing tomorrow's Army.—EDITOR.

WITH only very broad initial guidance, a germ of an idea, and an unswerving conviction that tomorrow's battles will be won or lost by today's decisions, the U. S. Army Combat Development Experimentation Center (CDEC) early in 1957 embarked on an endeavor for which no precedent existed. Since then, this germ of an idea has been expanded into a capability which has already begun to influence the Army's approach to the development of future organizations and operations.

The mission of CDEC and the entire Combat Development System is to assist the Commanding General, U. S. Continental Army Command (CONARC) in the discharge of his responsibilities for the development of and experimentation with new concepts, organization, doctrine, and procedures for the Army in the field.

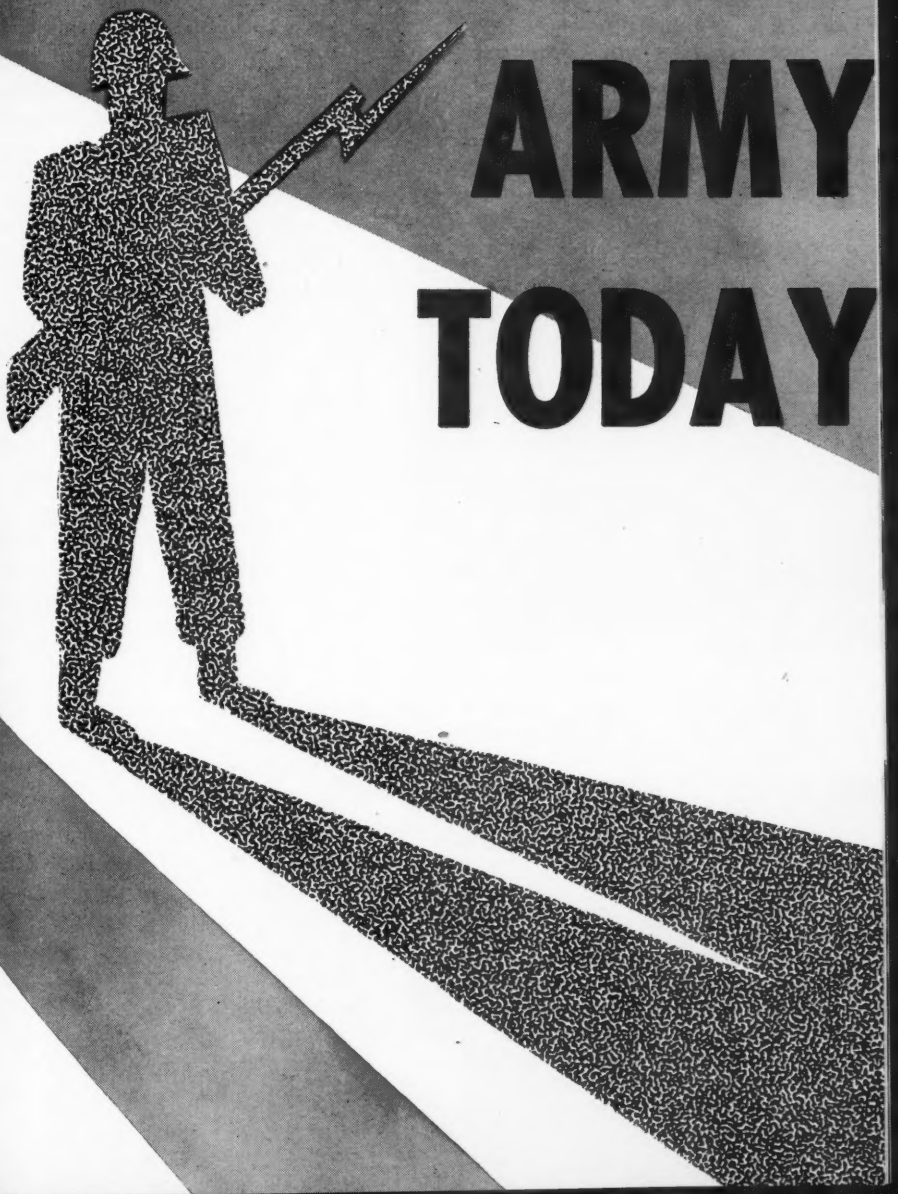
Specifically, CDEC provides the "field laboratory" facilities necessary for the experimentation with concepts, organization, doctrine and procedures for future combat, generated by the entire Combat Development System, of which CDEC is a part. This involves design, conduct, analysis, evaluation, and report of experiments with maximum objectivity and scientific control, and includes the development of combined military-scientific methods and procedures to accomplish these experiments.

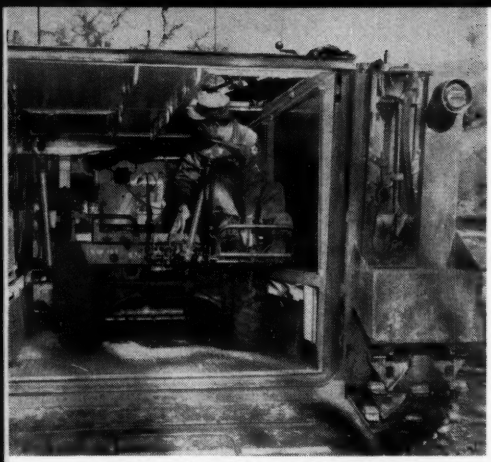
The Combat Development System has, as its focal point, Headquarters USCONARC, Fort Monroe, Virginia, and includes Combat Development agencies, all of the Technical and Administrative Services, the USCONARC Combat Arms Schools, U. S. Army War College, U.S. Army Command and General Staff College, U.S. Army Aviation School and certain overseas commands.

BRIGADIER GENERAL FREDERICK W. GIBB is Commanding General, U. S. Army Combat Development Experimentation Center, Fort Ord, California.

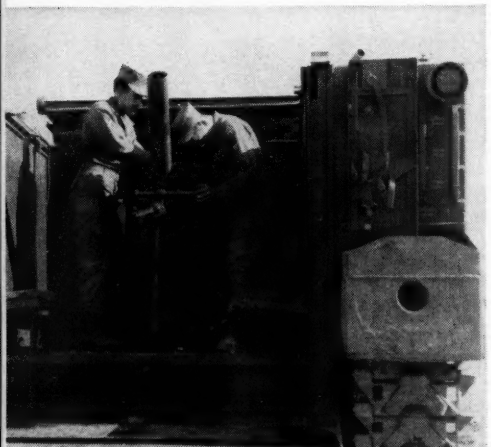
Continuing the development of

TOMORROW'S ARMY TODAY

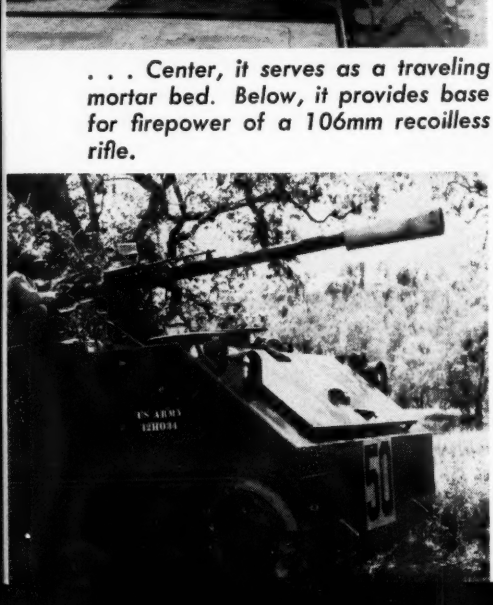




SPEED, MOBILITY, FIREPOWER—Keynotes of tomorrow's Army are investigated in varied experiments. Above, armored personnel carrier takes on an Army Mule . . .



. . . Center, it serves as a traveling mortar bed. Below, it provides base for firepower of a 106mm recoilless rifle.



Considerable thought and effort have been expended in developing a workable concept for field experimentation which integrates scientific methods, objective military and scientific evaluation, and combat realism. CDEC's philosophy and approach has been one of isolating the basic military problems to determine military requirements for the future. The subject matter of the experiments is assigned by the Commanding General, USCONARC, primarily on the basis of studies and recommendations of agencies of the USCONARC Combat Development System.

Obviously, the Army must be prepared to fight at any time with available materiel, organizations, and associated tactics and techniques. Eventually however, new tactical concepts must be developed requiring the use of new materiel and the appropriate organization for its use.

Developing weapons and equipment in isolation without regard to their tactical applicability is a costly, cumbersome, and inefficient way to maintain a progressive army. It requires the tailoring of future military operations and organizations to fit the material capabilities in being, and fails to produce essential guidance to science and technology.

Historically such an approach has been the rule rather than the exception. For many years technological developments radically affecting military operations had been few and far between, leaving no alternative except to design a fighting force around a new development. Fortunately, this situation no longer exists.

TODAY we have a "supermarket" of brains, ideas, and technical skills awaiting a clear statement from the military as to the tactical requirements. Once stated as an objective, it is a matter of relatively short lead time for science, technology, and military skills to produce the desired tools. There is a wide choice of methods and potential material from which to select combinations to provide the greatest flexibility, compatibility, and the like, to meet the established objectives.

CDEC experimentation is conducted within two time frames—mid-term and long-range. The mid-term goal strives for optimal integration of missions, tactics, techniques of employment, and organization with weapons and equipment which will be or can be made available within a given time frame.

The long-range goal looks to the time when we are not shackled by the actions and material development of the past but are free, within the general framework of a mission to be accomplished, to build the tactics, techniques, organization, weapons and equipment considered adequate to force any potential enemy to react in such a way as to insure his defeat at minimum cost to us. This is a most difficult goal, but it must be achieved if we are to survive on the future battlefield against any aggressor having numerical superiority in manpower and quantitative superiority in equipment.

TYPES OF EXPERIMENTS

ALREADY CDEC has completed one major experiment on basic procedures—*i.e.,* on methodology of conducting a field experiment—as well as one primary experiment, and numerous auxiliary or side experiments. A primary experiment is one which evaluates the effect of certain predetermined and controlled variables on the combat effectiveness of an organization. An example is the so-called Mobility Experiment completed last December, which was conducted to compare the combat effectiveness of several future type organizations using various means of transport.

True mobility is not a function of movement alone but a combination of those factors which permit a commander to choose the disposition and actions of his available resources at the desired time and place in order to accomplish his mission most effectively. During the Mobility Experiment, such factors as command and control, communications, and fire power of a combat force operating in dispersed formations on an atomic battlefield were investigated. Although held constant in order to isolate the mobility variable, the various factors were closely scrutinized to pinpoint deficiencies for further study and future experimentation.

"United States troops must . . . be assured that today's weapons will be replaced before they become obsolete and that new tactics and techniques will move hand-in-hand with new weapons. . . . CDEC and the entire Combat Development System is concerned with this effort."

In mobility experiments, tests are made of a 106mm recoilless rifle mounted on the Army's new Mechanical Mule.

The conclusions and recommendations resulting from this experiment are classified but two examples can be cited to give an idea of the type of findings that evolved:

Difficulty with communications at company level was anticipated and more powerful radio sets were provided to all units to insure contact with the dispersed elements of the company, adjacent units, and the next higher echelon. In some instances the radios used to attain the required distances were too bulky and required too great a primary power source. However, information is now available from which can be developed finite requirements for essential components of a desirable company communications system.

Resupply to forward elements that are mobile, dispersed and capable of effecting frequent and rapid displacement on the atomic battlefield becomes a problem. Units must be located, identified and reached by ground or air, even when they are isolated as a result of combat action or enemy infiltration tactics. To meet the far more complex tasks which the battlefield of the future will present, new equipment and techniques of operation must be developed for logistical support elements in the forward areas. Again the problem is recognized and sufficient knowledge has been achieved to implement further experimentation.

CONDUCTED concurrently with the Mobility Experiment was a small-scale experiment in combat surveillance. Its purpose—to determine the capability of a combat platoon of the future to conduct ground reconnaissance and surveillance missions. This was the first in a series of experiments designed to investigate requirements for

adequate reconnaissance and surveillance at the combat group level.

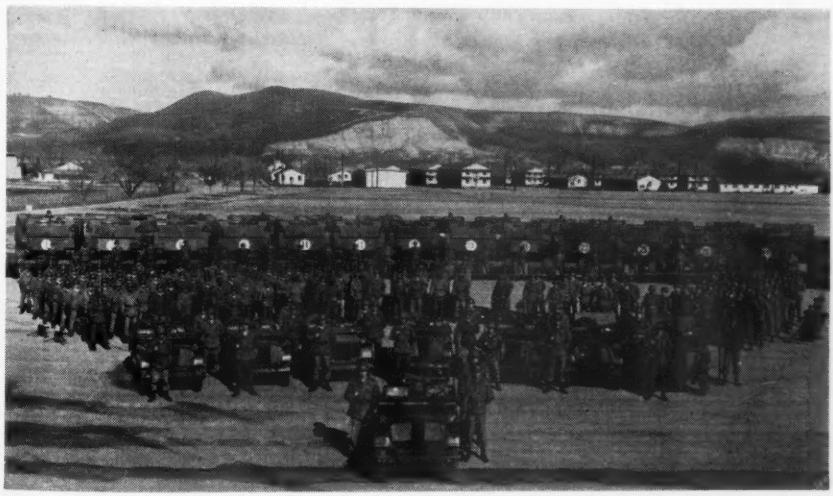
Several auxiliary or side experiments have been conducted at CDEC to obtain basic performance data on the tactical application of weapons and equipment for use in primary experimentation. Excellent terminal effects data for existing weapons are available from the various ballistic research laboratories of the technical services, and these sources are being exploited to the maximum to obviate any duplication of such effort at CDEC. Effects data required for weapons of the future are derived from approved military characteristics, or from assumptions of desired effects to be translated later into appropriate military characteristics.

Understandably, opposing forces used in CDEC experiments prefer to avoid the use of live ammunition in two-sided engagements. Accordingly, in order to obtain realistic weapons application times, response times and casualty effects, factual data is developed under tactical conditions in auxiliary or side experiments firing live ammunition at appropriate target complexes. Probability tables are then developed for use during two-sided engagements to determine when fires can be delivered, whether or not the fire delivered actually hit the target, and if so, what damage or casualties resulted.

Basic information of this nature is essential for realistic development of future tactics and techniques of employment. Response time and space time together with target characteristics and casualty effects are the fundamentals comprising the measurable framework of any tactic or technique. Inaccurate or unrealistic application of these factors could result in obscuring or discarding a highly desirable tactic, or lead to the acceptance of a tactic incapable of being implemented in battle.

ACCURATE basic performance data will give the individual soldier a better appreciation of his

Troops attached to Combat Development and Experimentation Center assemble en masse with armament and vehicles during training.



own and his unit's capabilities and limitations. Training literature of the future can reflect these data to give a more accurate description and coverage of unit training requirements. A more valid basis will exist not only for developing and conducting unit training tests, but also for compiling accurate tables in umpire manuals for future conduct of unit exercises and maneuvers. Agencies conducting war games will have a continuous source of reasonably accurate basic tactical performance data that heretofore has not been available.

Auxiliary experimentation was conducted with the 4.2-inch mortar, the 105mm and 155mm howitzer, and the 3.5-inch rocket launcher. CDEC will participate in a similar type experiment in conjunction with a joint user-service test of an antitank guided missile by an Army material development board.

EXPLORATORY EXPERIMENTS

ANOTHER type of investigation conducted by CDEC consists of "exploratory experimentation" —investigation of the combat applicability of proposed tactical or technical developments to determine requirements for future experimentation. This type of preliminary investigation may be accomplished by historical research, war games, or by military observation. Usually requiring only a minor effort, it nevertheless provides much valuable reference information in planning for full-scale experimentation in which the proposed development will appear in a more refined form.

A current example of this type experimentation involves joint participation with the Marine Corps in exploring the capabilities of a new development in forward area individual air defense weap-

TESTING TACTICAL EFFECTIVENESS

"The Army is constantly seeking to improve its organization and refine its tactical concepts in order to take maximum advantage of the new weapons and equipment which are being developed. In view of their rapidly increasing complexity and versatility, the Army established a Combat Developments Experimentation Center at Fort Ord, California, a year and a half ago to determine by scientific experimentation with actual troops, weapons, and equipment the comparative tactical effectiveness of various combinations of manpower and materiel under the anticipated conditions of the atomic battlefield of the future.

"The Center is pioneering in many fields of combat development evaluation. The efforts of the scientific and military experts at Fort Ord, who are bringing their concentrated talents to bear upon the Army's problems, help immeasurably to insure that the Army will always have a sound basis for determining organizational patterns and tactical doctrine best suited to the accomplishment of its mission under any conditions of warfare."

The Honorable Wilber M. Brucker, Secretary of the Army, before the Association of the United States Army Battlefield Mobility Symposium, Fort Benning, Georgia, 25 March 1958.

onry. Plans for full-scale experimentation with this weapon have been incorporated in a major primary experiment on aircraft vulnerability to be conducted during Fiscal Year 1959.

CDEC is currently conducting a primary experiment to examine command and control capabilities of a company-size organization. Dispersion in both width and depth habitually has been the reaction to increased range and lethality of weapons. The average World War II company frequently fought on frontages from 600 to 800 yards, and in depths of 400 to 800 yards. One small atomic weapon could have eliminated this formation, and we must assume their use by any potential enemy.

One means of attaining dispersion without sacrificing security is to retain a high degree of mobility. Another means might be to reduce the number of echelons of command on the battlefield; however, any advantage in this direction might be offset somewhat by the requirement to place more subordinate elements under each echelon.

Which is the better solution: more echelons of command, or fewer echelons containing more subordinate elements? These and other factors, including the time element involved in receiving and acting on orders, have considerable impact on the combat effectiveness of a unit. They are among the basic factors under investigation in CDEC's current experiment on controllability.

The Controllability Experiment is currently examining the combat effectiveness of future company

SCIENCE, MILITARY TEAMS work closely together in all phases of CDEC experiments. Above, a civilian checks soldier's reactions . . .

. . . while a fast-action camera, center, records hits in firing tests. Below, a team prepares a gun camera analyzer.

organizations operating in mobile, dispersed formations with drastically increased fire power as influenced by company headquarters of two different strengths and organizations, and varying numbers of subordinate elements. The smaller headquarters will be similar to those found in the current divisions. The augmented headquarters will have a small operational staff.

A series of experiments will be conducted using a live aggressor and various terrain courses, alternating the company headquarters, and varying the number of subordinate elements from six to ten. Captains and majors will alternately command each type unit.

Data will be gathered to determine the most effective combination, by number and type, of subordinate elements to comprise this company organization, and the area that such a unit is capable of controlling. Also under examination is the ability of the selected headquarters groups to control the units as well as the impact of the rank of the commander of this organization.

An Artillery Support Experiment, conducted concurrently with the Controllability Experiment, will examine the capability of proposed artillery to provide continuous and close support for the combat group.

TAILORING FORCE TO MISSION

THE most interesting and challenging effort at CDEC centers in the first of a series of experiments in a long-range program. The overall objective of this program is to develop, from the ground up, combat forces at various echelons designed to accomplish their respective missions most effectively.

These missions with their associated tactics and techniques of employment are derived from latest Department of the Army concepts of future military operations and from relevant long-range plans and studies. Technological advances are accelerating at such a rate that even the most imaginative concepts for future military operations can well be commonplace or even obsolete when the time frame envisioned is reached. If information for all intelligence purposes can be developed with sufficient lead time, there is little doubt that the necessary materiel and required support will be forthcoming.

In developing plans for full automation of CDEC's umpire and control system, for example, it became apparent that it is technologically feasible, today, to provide equipment which will enable any element on the battlefield to know its exact location at all times, whether on the ground or in the air. Likewise, the proven but tedious and time-consuming artillery survey methods of today may be discarded in the forward battle area if an instantaneous, continuous, and reliable survey system sufficiently accurate for first-round hits at long ranges with future weapons can be economically produced.

Combat patrols, drone aircraft, or piloted aircraft can be unerringly guided to objectives behind the enemy lines. Available to the commander at division level, and possibly at a lower level, may be an automatic and continuous display of the location and movement

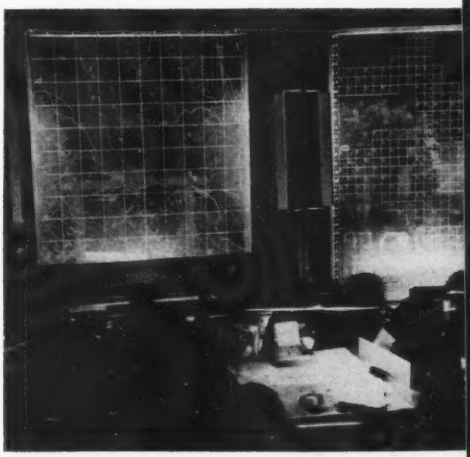
of his subordinate elements, as well as all reported enemy deployments. Information for both intelligence and target acquisition purposes can be collected, collated, and may be presented instantly and clearly to permit rapid decisions by the commander.

These are but a few examples of the technological possibilities which are being considered by CDEC in developing its long-range program. However, these anticipated capabilities are not being considered in isolation but rather in context with the missions to be assigned and tactics to be employed. If a highly desirable tactic can be evolved but the requirement for appropriate materiel to permit its implementation is not currently available or even on the drawing board, then the emphasis must be directed toward making the requirement feasible, rather than down-grading or compromising the tactic. The latter can always be done as a last resort.

THE Basic Mounted Unit Experiment, first in the long-range program now in progress at CDEC, is looking at various crew, vehicle, and materiel combinations which show promise of accomplishing the desired missions at the lowest combat echelon. Yardsticks of tactical performance are being developed for each combination, then analyzed to isolate deficiencies which prevent these units from accomplishing their missions. These deficiencies then become the basis of requirements stated in finite terms.

Meeting some of these requirements will test the ingenuity of science and technology; however, many contacts with science and in-

EXPERIMENTATION OPERATIONS CENTER—Focal point of umpire and control system is located in "air house," an inflatable, portable structure (above) where . . .



. . . full automation results in swift reflection of the experimental situation (center). Position reports (below) are received by radio from umpires with experimentation troops.

Infrared transmitter on recoilless rifle provides firing system to actuate receivers.

dustry indicate that the major problem is not in meeting the requirement but in *stating* it.

Planning for and conducting such experimentation calls for intelligent vision and vivid but controlled imagination. Ideas are called for and received from all sources, including the individual soldier who—regardless of the weapons system or degree of automation—must in the last analysis either make the weapon work or act on the information provided by the machine.

PROJECTS PLANNED

CDEC's program for the forthcoming year covers a variety of experiments to be conducted at various locations, and in some instances jointly with other combat development agencies.

An experiment to evaluate the vulnerability of Army aircraft to enemy ground fire in the forward area will be conducted at CDEC this fall, with the Operations Research Office (ORO) participating in both planning and execution phases. Primary purpose is to gather basic data on the survival capability of current and proposed Army aircraft when conducting various combat operations over enemy ground deployments.

Preceding this experiment is a smaller-scale one being conducted by the U. S. Army Aviation Center at Fort Rucker, Alabama, in conjunction with CDEC and the Ordnance Ballistic Research Laboratories. Its purpose—to determine the effect of suppressive fire delivered from Army aircraft.

Results of these experiments will be translated into probability tables for umpiring future CDEC experiments involving aircraft. These results also will furnish reasonably accurate and much needed basic data to ORO and other agencies conducting war games and studies in this area. More important still will be the impact on planned Army use of aircraft in combat operations—how many of what type it will procure, tactics to be employed, and the attendant degree of vulnerability and risk.

Another study will compare the combat effectiveness of several innovations in the small arms category—an analysis which may change the entire philosophy of small arms employment as well as close artillery support on the future battlefield. Certain aspects of the experiments will be conducted jointly with the U. S. Army Infantry School at Fort Benning, Georgia; the remainder will take place at CDEC in cooperation with the Operations Research Office.

NEXT spring CDEC will examine the operation of an entire combat group when all of the components which have been investigated can be integrated and correlated in a full-scale test of our interim military findings. In this experiment scientific measurement, not opinion, will judge our success.

Only by objective experimentation can a true evaluation of concepts, weapons, tactics, and techniques be determined. Realistic tactical situations will be created in which both opponents will know only that which would be known on the battlefield. Targets will be neither stationary nor moved in a fixed pattern, but will be completely responsive to the accidents of terrain, enemy actions or reactions, the orders of the commander, mission of the unit, and the like.

Thus will be determined the true capability of these organizations and weapons; but more important, concrete guidance for improvement of battlefield performance or for a completely new approach to problems of offense and defense should evolve.

SINCE CDEC's initial attempt to establish umpire techniques and procedures, great strides have been made in developing a rapid, accurate and responsive means to more nearly simulate the almost instantaneous reaction between cause and effect as it occurs on the battlefield.

An Experiment Operations Center has been established as the focal point of the umpire and control system. Plans are now underway to automatize casualty assessment as well as to provide an instantaneous and continuous visual portrayal of cumulative losses of personnel, and materiel by major type armament and/or equipment. All movement and locations of subordinate elements also will be portrayed.

The system will involve UFH and VFH radios, microwave radio relay, infrared, electronic computers, and electronic display and position fix equipment. As a by-product, continuous use and refinement of this system should provide valuable data which will materially assist in a more rapid and sound development of the Army's proposed accelerated data processing system.

TRAINING CDEC TROOPS

IN developing the training directive for troops participating in CDEC's first major experiment, it became apparent that there were gaps in available training literature translating future operational concepts into tactics and techniques of employment at company level. This deficiency is expected to be alleviated in the future through assistance from the various service schools. Meanwhile, CDEC has had to assume this added, though unprogrammed, responsibility of developing sufficient training guidance to insure that experimentation troops obtain a minimum state of training under the proposed concepts prior to the actual experiment.

New concepts of employment vary considerably from those learned by previous experience. Officers and NCO's must be "unlearned" from methods and doctrine of World War II or Korea, and reoriented in the concepts being employed in the experiment.

Future leaders now must be trained in techniques one echelon above that normally associated with the position. To operate within the concept envisioned, a squad leader must be able to read a map quickly, orient himself on the ground, operate a more powerful radio, and assume increased responsibilities of security, control and logistics. Briefly, he must assume responsibilities formerly associated with a more experienced platoon sergeant or even a platoon leader.

There is no finer training available today in the Army than that which is afforded CDEC Experimentation Troops. They are constantly in the field training and experimenting with or simulating the use of the latest equipment and employing the most advanced techniques. An Einstein is not required to fill the rifleman's boots—only an average intelligent prototype of the American fighting man. As for the young and promising career officer, he will find that there is no better, more stimulating assignment in the Army today than to be given duty with these troops.

ANTICIPATING ARMY NEEDS

THE bulk of the Army stands with its bayonets fixed, ready to fight with today's weapons anywhere in the world. This role must remain unchanged in a world charged with tension. United States troops must, however, be assured that today's weapons will be replaced before they become obsolete and that new tactics and techniques will move hand-in-hand with new weapons. One segment of the Army must be devoted to this improvement. CDEC and the entire Combat Development System is concerned with this effort.

In the past our Nation has had time to adjust to the new conditions when war came. A buffer of time and space allowed us to re-equip and reorganize in time to meet the threat. We benefited by the battle experience in developing concepts for the employment of forces and measures to counteract enemy effectiveness. In the future, we will not have the buffer of time and space to adapt to new concepts. We will not have the battle experience of others to indicate needed changes in our concepts, organizations, and equipment.

CDEC is an Army agency that is doing more than just studying the battlefield, and is unique in this respect. It is actually conducting two-sided tactical operations on the battlefield of the future. Only through such continuous study and experimentation can we be assured that the United States Army will be armed, equipped, and organized to meet any threat instantly with the world's finest fighting system.

Through the U. S. Army Combat Development Experimentation Center with its unique facilities and experimental experience, our Army can be provided with information, hitherto unavailable, upon which decisions on the organizations, weapons systems, tactics, and techniques of the future may be based.

THIS COPY IS AIMED AT TEN READERS.
MAKE SURE IT HITS THE MARK. PASS IT ALONG!

COMMAND LINE

ON OUR INTERNATIONAL COMMITMENTS

"It is always well to remind ourselves of the present extent of our commitments. We have pledged ourselves to assist, under varying terms, some 50 foreign nations that may be threatened by Communist aggression. We are participating members in 12 regional pacts, designed to develop collective strength to oppose aggression. Under the Military Aid Program, we are providing assistance to 43 countries, whom we regard as friends and allies. In many of these countries we maintain military missions for the purpose of assisting in training their troops to use our equipment. For example, the United States Army today is engaged directly, or indirectly, in the training of some 200 foreign divisions. These data are suggestive of the extent of our current foreign commitments and the need to verify from time to time that we do indeed have ready strength to make good on these commitments if ever they should fall due, singly or together."

General Maxwell D. Taylor, Army Chief of Staff at the Theodore Roosevelt Centennial Celebration, Chautauqua, New York, 21 July 1958.

ON EQUIPPING TOMORROW'S SOLDIER

"We envision the time when the individual soldier will be equipped with almost unbelievable firepower. He will go into battle with weapons and equipment that just a few years ago were to be found only in science fiction, yet today are on the drawing boards or approaching the prototype stage.

"The future fighting man may have a two-way helmet radio, and perhaps television and infra-red equipment; he may ride a flying platform or an aerial jeep; and he may carry in his individual shoulder weapon the thunderbolts of atomic firepower."

Lieutenant General Arthur G. Trudeau, Chief of Army Research and Development, before California State Chamber of Commerce, Los Angeles, California, 9 April 1958.

ON MISSILES IN GROUND SUPPORT

"What do our strategic Army forces need insofar as missiles are concerned?

"They need mobile weapons; they need air-transportable weapons; they need rugged, simple, reliable weapons; they need weapons which greatly extend the range of conventional artillery in order to control greatly increased areas. And, lastly, they need weapons whose power is proportionate to the task. Frankly, in many respects, a large number of very small yield atomic weapons is a much more flexible instrument of power than a few of very big destructiveness. These, then, are the things that we seek in our ground support missiles."

Major General John P. Daley, Director of Special Weapons, Office, Chief of Army Research and Development, before The Aero Club, Detroit, Michigan, 1 July 1958.

ON WEAPONS IMPROVEMENT

"Every item of weapons and equipment produced is obsolescent, but no weapon is obsolete. The trench knife and the club still have their uses and so does every other lethal weapon so long as mankind seeks to solve problems by resort to war.

"It is our task in Army Research and Development continually to improve on every weapon we have; for only by such progress is there any real assurance that we shall constantly be better armed and equipped to deter or defeat aggression."

Lieutenant General Arthur G. Trudeau, Chief of Army Research and Development, before California State Chamber of Commerce, Los Angeles, California, 9 April 1958.

SADDLES to A

Major General John L. Ryan, Jr.

What contributions can each of the combat arms make to the success of the Army's fighting team? Previous DIGEST articles have covered the role of Artillery ("Field Artillery—The King of Battle," September 1956; "Army Antiair—the Nation's Shield," November 1957) and Infantry ("The Infantryman in the Atomic Age," April 1958 issue). In the following article the Commanding General of the U.S. Army Armor Center rounds out the picture with a presentation of Armor's role in the combat arms team.—EDITOR.

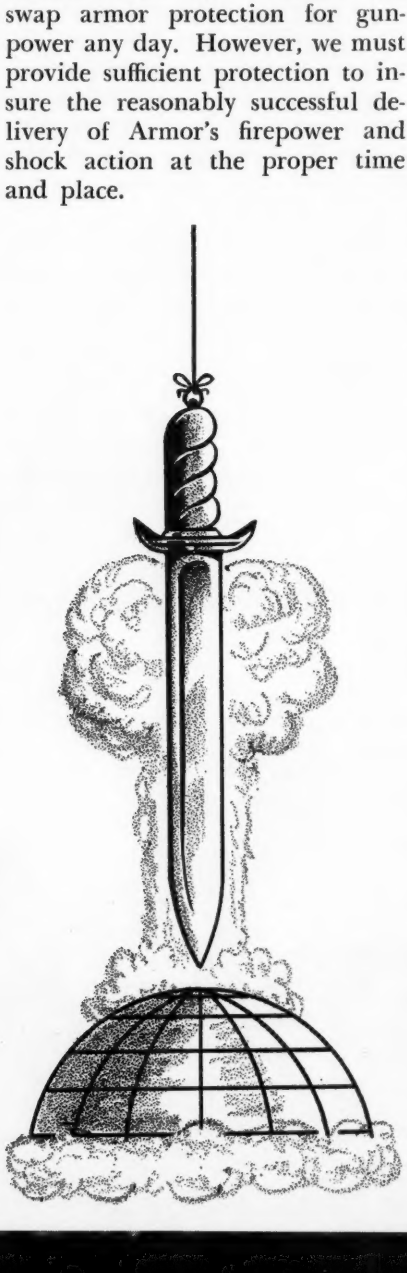
ATELLITES

OPERATING within the framework of the United States Armed Forces Fighting Team, Armor itself functions as a team—a combined arms team consisting of tanks, armored infantry, armored artillery, armored engineers—ably supported on the battlefield by Army Aviation and mobile technical and service units. Admittedly it is the tank that is the backbone of this team, but it is the team—not the tank alone—that earned for Armor, in battle, the proud title: "Combat Arm of Decision."

In speaking for Armor, I have no interest in perpetuating branches, services or weapons merely because they have, in past wars, earned well-justified fame. My primary concern, and that of the Armor Center, is to accomplish the utmost in providing the United States—now and in the future—with the greatest possible combat capability. There is but one criterion: Does this branch, service, or weapon contribute significantly to the defense of our country? If not, discard it.

MAJOR GENERAL JOHN L. RYAN, JR., is Commanding General, U. S. Army Armor Center, Fort Knox, Kentucky.

At the outset, let me refute one prevalent misconception, the purpose of Armor protection has never been to guarantee the crew a long, happy life. Protection of combat personnel against all the hazards of the battlefield is not only impossible; it is ridiculous to contemplate. Within reason we of Armor will swap armor protection for gunpower any day. However, we must provide sufficient protection to insure the reasonably successful delivery of Armor's firepower and shock action at the proper time and place.



NUCLEAR ERA WARFARE

DURING the past decade frequent additions of new and formidable weapons to the arsenals of world powers have introduced profound complexities to the art of war. The refinement of highly sophisticated delivery systems may, in the near future, enable thermonuclear weapons of multimegaton yields to be launched over vast distances against selected targets with pinpoint accuracy.

Many leading strategists maintain that these weapons have a potential destructive power so awesome that they, in themselves, act as a major deterrent against the catastrophic struggle which would naturally follow their unrestricted employment. In the words of Field Marshal Bernard Montgomery, an all-out nuclear war would be "mutual suicide."

In keeping with the philosophy of deterrence—a part of our national policy—an established capability to make all-out nuclear war unacceptably devastating to the enemy certainly renders such a war less likely. Rarely since the dawn of history, however, has the world been without some form of conflict. The premise that war in some form might occur in the future must be accepted.

What form, then, will war take in this atomic era? A reasonable conclusion is that the next conflict likely will be limited in nature and scope because of the natural reluctance of all nations to initiate an unrestricted nuclear war in which there could be no victor.

At all levels of command the aspects of limited war should be of intense interest because of the political and military implications in-

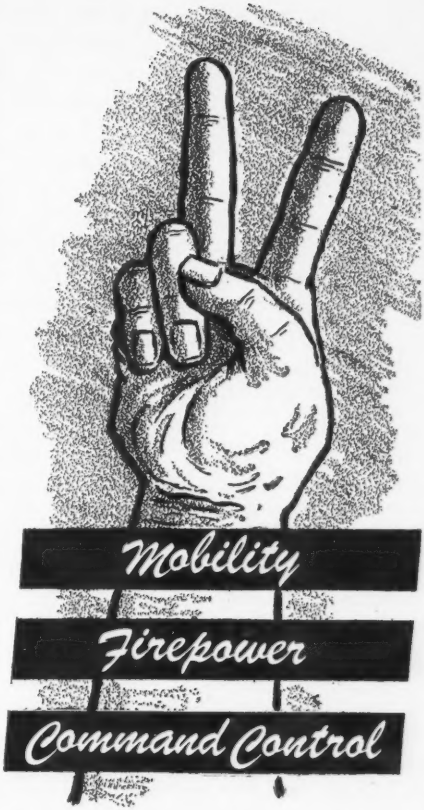
volved. We must assume that on any future battlefield atomic weapons may be used against selected tactical targets from the outset, and that the threat of their use will be constant. General Maxwell D. Taylor has stated, "There never will again be a war involving the major powers without the use or the threat of use of nuclear weapons. Until they are used, the threat will hang over every engagement, and will impose a requirement for constant readiness for a nuclear surprise. A sure way to encourage an enemy to use nuclear weapons would be to confront him with a force unprepared for nuclear action."

ARMOR AND MOBILITY

EVEN in the atomic era, battlefield potential continues to be a function of its classical components of firepower, shock and maneuver. In order properly to exploit our own atomic weapons, our ground combat forces must possess the highest order of battlefield mobility.

Mobility has always been one of the factors the field commander seeks to achieve. Superior tactical mobility permits the rapid movement and wide dispersion that minimizes the effects of the enemy's atomic weapons. On the fluid battlefields of the atomic era, superior tactical mobility will be an essential ingredient for success.

Armor units possess the essence of battlefield mobility. They provide swift, hard-hitting mobile forces vital to both atomic and non-atomic warfare. They are readily formed into highly mobile, integrated fighting teams tailored to meet the requirements of the



immediate situation, capable of rapid reaction to orders of the commander because of an extensive, flexible and reliable communications system. Armor is admirably suited for the offensive action which is so vital to the retention of the initiative—a cardinal principle of war.

General Willard G. Wyman, until recently Commanding General, United States Continental Army Command, has stated, "On the atomic battlefield victory will belong to the side possessing superior mobility, superior firepower, and superior command control."

Armored divisions and Armored Cavalry regiments fulfill these requirements to a high degree. They

are well prepared to meet the challenges of the non-atomic battlefield. They possess tremendous firepower in conventional weapons, and with their organic or attached atomic weapons delivery capability are ready for the atomic battle. They have the superior battlefield mobility that enables them to concentrate stupendous firepower in conventional or atomic fires at the decisive time and place.

The words "mobility" and "dispersion" have become as common in today's military parlance as were the words "trench" and "wire" during World War I. Mobility and dispersion involve movement, and movement attracts attention. Mobility can be dangerously expensive, and dispersion can be disastrous if not wedded to tactical flexibility and control.

In Armor we find an efficient blend of the characteristics so necessary to success on any battlefield. Armored divisions, with their built-in mobility, armor-protected firepower, shock action, flexibility and responsiveness to command are among the most effective ground fighting organizations yet devised.

All too frequently the Armored Cavalry regiment is regarded primarily as a reconnaissance or security force. This regiment is in fact a combined arms fighting team capable of executing missions similar to, but not of the same scale as, those usually associated with the armored division.

In areas where opposing armor is not strong, the Armored Cavalry regiment, as an economy force,

Cross-country capabilities plus ability to strike with speed and power make this the backbone of the Mobile Forces Combined Arms Team.

Armored artillery provides close support to the Armor team with the mobile firepower of its self-propelled howitzers.

would be entirely appropriate and fully capable of performing an assault role. Furthermore, the regiment can be moved rapidly to reconstitute a larger force that has suffered high losses from enemy nuclear weapons, or to limit hostile exploitation of an atomic strike.

A CONCOMITANT of Armor's mobility is flexibility of organization. This flexibility is invaluable on the atomic battlefield because of the variety of yields of nuclear weapons which make possible an unprecedented range of battlefield conditions or environments. On any battlefield, it is advantageous for combat forces to shift quickly from relatively large formations to small semi-independent combat groupings of company size, and back again. In nuclear warfare this capability is essential.

The inherent flexibility and mobility of Armor organizations, so amply proved in World War II, make possible this sudden shifting or tactical regrouping, even when in contact with the enemy. Armor's flexibility is enhanced by its high order of tactical mobility and its reliable communications system.

ARMOR IN ATOMIC BATTLE

ALTHOUGH not originally designed to do so, our armored vehicles provide a high degree of protection against the effects of nuclear weapons. Blast and thermal effects are minimized and radiation is attenuated significantly—all this without sacrificing mobility. Twelve inches of armor plate give protection against radiation equivalent to that provided by three feet of concrete or five feet of earth. But when one is covered by three feet of concrete or five

No need to wait for bridges—here armored personnel carriers show their ability to negotiate water hazards as they "swim" the Ohio River.

feet of earth, maneuver is somewhat restricted.

If our forces are subjected to hostile nuclear weapons, the man in a foxhole, or shielded by other materials, can survive but may be immobilized for precious hours or even days. The surviving tank, if undamaged, can move rapidly to another location, ready to fight.

If we use nuclear weapons, the man on foot or in a thin-skinned vehicle must skirt the contaminated area. The physical shielding afforded by armor decreases the risk of exposure to casualty-producing doses of radiation and may permit attack through the contaminated area. Armor and nuclear weapons together create a formidable combination of ground combat power.

It is technically feasible to predict within close limits the destruction to be wrought by nuclear weapons of various yields—the loss of airfields, refineries, even cities. But I know of no yardstick short of utter devastation by which to predict the death of the will to resist prior to the arrival of victorious ground forces. Perhaps this is one reason why Russian military doctrine states that armored forces are the basic striking force of the Soviet land army.

VERSATILE COMBAT ARM

ALTHOUGH we look to and plan for the future, an occasional glance over the shoulder might be rewarding. Have fission and fusion made the tank any less fearful to the man on foot? Does possession of atomic delivery systems alleviate the woes of a Corps Commander whose command post is overrun by enemy armor? The first atomic bomb put new and higher values on mobile, armor-protected firepower.

We often hear that vast areas of the earth's surface cannot be negotiated by tanks or other heavy equipment. True, there are such areas but a realistic terrain analysis reveals that many of those areas are uninhabited or are so remote as to be of no tactical significance. The same study also discloses that a surprisingly large part of the world's land surface can be traversed by tanks and these areas are the more important ones.

Armor's versatility in a tactical situation is most advantageous. Armor can successfully conduct sustained mounted combat, deep penetrations, wide envelopments, swift exploitations, and rapid pursuit. Armor can delay or defend without becoming inextricably engaged; its tanks constitute a dangerous mobile reserve on the battlefield. Army Aviation—with its reconnaissance, target acquisition, and air transport capabilities—has extended greatly the ability of Armor to perform rapidly and successfully its roles in both nuclear and non-nuclear warfare.

Admittedly our Armor units are difficult to transport and present a tremendous logistical problem. However, any nation that built the first atomic bomb has the know-how to develop revolutionary improvements in its armored fighting vehicles. The capability of sustained mounted land combat is too vital to our security to be forgotten through fascination with pushbutton warfare. In this connection, it is perhaps noteworthy that the Soviet Union is producing quantities of amphibious armored vehicles, including tanks.

Armor—as a member of the United States Armed Forces Fighting Team—stands ready to do its full share in deterring aggression and, if need be, to assist in destroying aggression.

Under artillery air bursts, tanks and armored personnel carriers demonstrate teamwork as they advance during a maneuver.

With illness causing more manpower losses than battle action, the commander in future limited war operations must recognize that

DISEASE CAN BE DECISIVE

Colonel Arthur P. Long

LIKE the old adage about the squeaky wheel getting more attention than the other three, battle casualties which involve wounds and shock, which are dramatic and easily visible, receive more attention than manpower losses due to disease and non-battle injuries. The public in time of war reads the casualty lists but seldom is aware of the other causes of losses; the commander, too, is often mainly concerned with battle casualties and their replacement in order to maintain his unit at fighting strength.

Yet it is a little-known fact that manpower losses due to disease and non-battle injuries have accounted for nearly four times as many lost hours as the battle injuries. The thoughtful officer might well be more concerned with such sources of attrition to his unit.

In any future war—especially in the case of limited war fought under highly unfavorable environmental conditions—such manpower losses most likely will be even more serious than in the past.

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IN TIMES of peace, military forces always are confronted with, and must plan on, the occurrence of casualties resulting from disease and injuries. In such times, however, their extent and significance may vary widely. Their real import lies in their effect on the training program, on readiness for combat, and on requirements in personnel and funds for their management.

But in times of war, despite all that modern military medicine has accomplished—and the reduction has been enormous during the last 50 years—the conditions of warfare inevitably add to the instances of both disease and accidents.

To point up this fact, consider these facts and figures: During World War II, in the European Theater from June 1944 through May 1945, admissions to U. S. Army hospitals for disease was 63 per cent of all admissions, while non-battle injuries accounted for 14 per cent. The remaining 23 per cent were battle injury and wound cases. In Korea, from July 1950 through July 1953, the figures were 66, 17 and 17 percent respectively. In the short action of British troops in Suez in 1956, the figures

> *". . . In the European theater in World War II, less than a quarter of [hospital] admissions were for battle wounds and injuries. The experience during the Korean War was generally the same, with a higher proportion of disease casulties, as might be expected since environmental conditions were less favorable than in Europe."*

were 76 per cent for disease, 12 per cent for non-battle injury and 12 per cent for battle injury and wounds. (*See Chart*)

Broken down in another manner to analyze the percentage figures more fully, in the European Theater there were 484 admissions per 1,000 per year for disease, 111 for non-battle injury and 176 for battle injury and wounded. In Korea these figures show 504 for disease, 126 for non battle injury, and 127 per 1,000 per year for battle injury and wounds.

In other words, in the European theater in World War II, less than a quarter of admissions were for battle wounds and injuries. The experience during the Korean War was generally the same, with a higher proportion of disease casualties as might be expected since environmental conditions were less favorable than in Europe.

Such figures still might not be entirely conclusive, since admittedly many of the disease and injury cases were minor in character. But when it is considered that best estimates are that for the entire World War II period, *diseases accounted for nearly four times as many man-days lost as battle injuries and wounds*—then the facts assume considerable more importance for commanders.

IF THESE conditions held true during World War II and Korea, certainly the environment of any future war may be predicted to be unfavorable for the health and well-being of United States armed forces. Sanitation cannot be ex-

ADMISSIONS FOR BATTLE AND NONBATTLE CAUSES, U. S. ARMY EUROPEAN THEATER IN WORLD WAR II AND KOREA AND BRITISH ARMY IN SUEZ

COMMAND	DISEASE	NONBATTLE INJURY	WOUND AND BATTLE INJURY
	PERCENTAGE OF ADMISSIONS		
A. European Theater (June 1944 through May 1945)	63	14	23
Korea (July 1950 through July 1953)	66	17	17
Suez (November 1956 through December 1956)	76	12	12
	ADMISSIONS PER 1000 PER YEAR		
B. European Theater (June 1944 through May 1945)	484	111	176
Korea (July 1950 through July 1953)	504	126	127
Suez (November 1956 through December 1956)	461	74	70

pected to be any better than in the past. Water, climate, terrain, insects—all may contribute to disease. It may well be expected that among native populations, whether human or animal, there will again be various diseases not previously experienced by U. S. troops.

In those situations where vectors are necessary for the spread of disease, they will be present—the mosquitoes for malaria and dengue; the lice, mites, fleas and ticks transmitting the various forms of typhus; the flies for dysentery and African sleeping sickness.

Even in sparsely populated or unpopulated areas, soldiers may be expected to contract various diseases, since in many instances man is not necessarily an element in the cycle of disease transmission —as in yellow fever, for instance, (for which fortunately we have a positive control procedure), or African sleeping sickness or scrub typhus (for which we lack such control). These and various other illnesses are transmitted from animals when man appears in an unpopulated area.

In addition, many of the conditions and diseases which are present but kept well under control in peacetime, can and do easily become seriously significant when taken into an unfavorable environment. Skin disorders, diarrheal diseases and neuropsychiatric conditions are examples here.

Beside the biological factors involved, unknown and unpredictable situations arise during wartime that pose serious problems. An example of this is the failure of North Korean and Chinese body lice to respond to DDT. Another factor noted in the Korean War was resistance of the local variety of bacillary dysentery to drugs commonly successful.

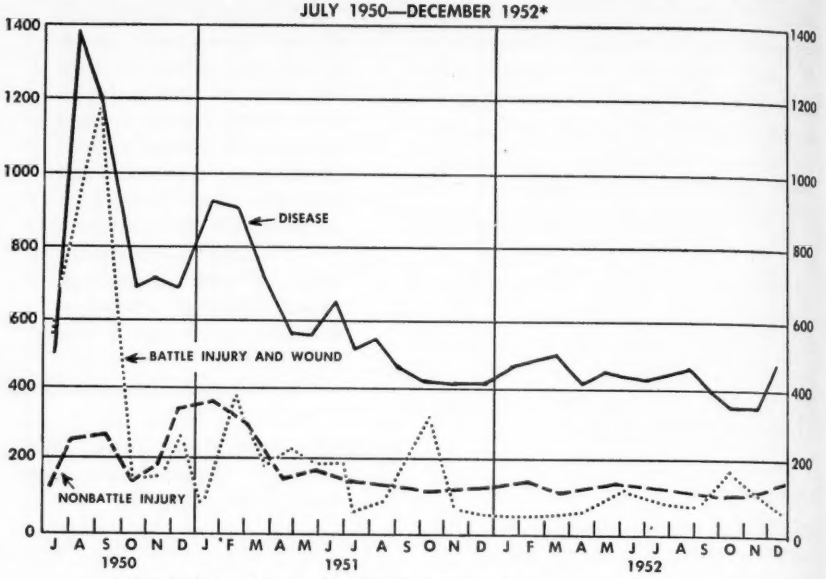
> *"On dispersed battlefields of the future, area control of the environment will of necessity be rather minimal. Control of disease hazards will be largely dependent on the small unit and the individual. Thus discipline of the individual in disease prevention, coupled with more advanced training in hygiene, will be even more important than in the past."*

WITH the introduction of new concepts of organization and military operations, such ills arising under unfavorable environmental conditions may become even more significant. On dispersed battlefields of the future, area control of the environment will of necessity be rather minimal. Control of disease hazards will be largely dependent on the small unit and the individual. Thus discipline of the individual in disease prevention, coupled with more advanced training in hygiene, will be more important than in the past.

Even with the individual more highly trained, and more impressed with the necessity for discipline for his own health's sake, experience plays a large part. Actually, the true effectiveness of training and discipline will be attained only through appropriate experience in the environment itself.

This is shown by an analysis of the hospital admission rates in Korea from July 1950 through December 1952. Admission rates

RATE OF ADMISSION TO MEDICAL TREATMENT FACILITIES—U. S. ARMY TROOPS IN KOREA
JULY 1950—DECEMBER 1952*



* Number of admissions to medical treatment facilities per 1,000 average strength per year.

were at their peak during the early months of the war. But as experience was gained, the rates fell off. (*See Chart*)

It appears quite likely that in any such limited war in the future, there will be limited facilities for care of casualties in the advanced theater itself. Those who cannot be returned to duty within a very few days will, of necessity, be evacuated to the rear. This evacuation might well be to the continental United States through swift aircraft transportation as well as by slower hospital ships.

With high admission rates which may occur, particularly in the early phases of an operation, this could result in serious manpower losses, thereby creating great replacement problems for commanders. There would of necessity be a constant influx of inexperienced men, among whom disease casualties could be expected to be high. Thus the situation would tend to perpetuate itself.

The entire matter is of grave concern to any commander. It becomes the business of all responsible military personnel to help close the gaps that exist between basic knowledge of disease prevention and successful application of these procedures and techniques.

From the vantage point of the immediate situation, and looking into the future and its implications, there appear to be three principal lines of positive thinking and action which, if pursued vigorously, should yield worthwhile results in achieving real economy of effective manpower in future wars, especially in limited wars. These are:

- Continued and expanding attention to appropriately planned and designed research activities for the production of essential new knowledge.

- Added emphasis, time and attention to education and training of individuals and small units so that the knowledge of medical science may be appropriately applied.

- Provision of definitive medical and surgical care as far forward in the combat area as possible to minimize losses through early and rapid evacuation to the distant rear areas.

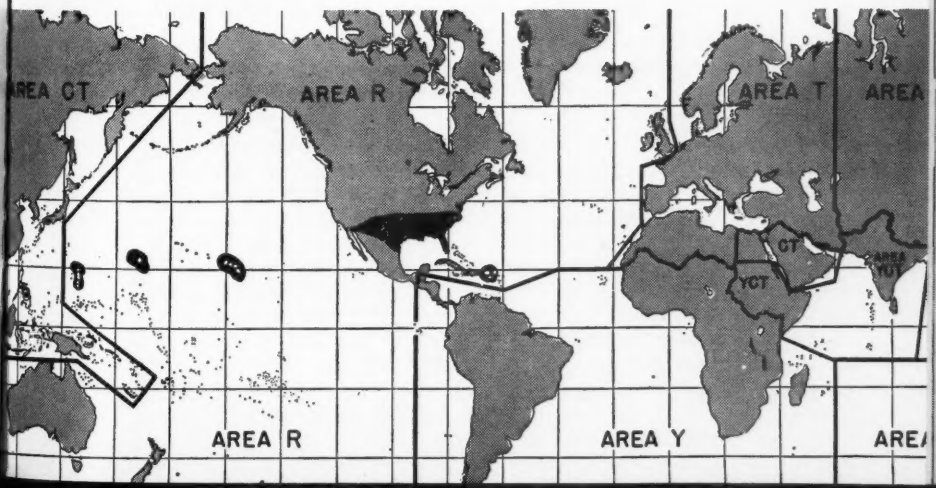
By a judicious combination of knowledge with training and individual discipline, the soldier could gain field experience more rapidly and protect himself against disease. Provision of medical care as far forward as possible should mean swifter recuperation from disease and illness. This would reduce losses to a minimum.

The difficulties of allotting more training time for individual hygiene and providing more experience during field exercises are of course great. But more attention to this source of manpower loss will pay off for the commander during actual combat operations.

IMMUNIZATION REQUIREMENTS WORLD-WIDE

SIZE AND FREQUENCY of certain booster shots are being reduced, the Army Surgeon General's Office has announced, to give some relief to the bugbear of the recruit. Present typhoid-paratyphoid immunization practice calling for a booster shot every three years has been reduced so that only two are given at four-year intervals for those remaining within the continental United States, Canada, Alaska or Hawaii. Further boosters are required only when the individual travels to some other area of the world. Reductions also have been announced for cholera and typhus vaccines so that once the basic series has been given, no more will be needed.

AR 40-562, recently issued, cover the Army's part in a revised tri-service immunization program. The accompanying map indicates world areas in which certain immunizations are required. Area R (for "routine") is the basic area—encompassing North America, England, the North Atlantic and most of the Pacific—where smallpox, typhoid-paratyphoid, tetanus-diphtheria and poliomelitis (outside continental United States) immunizations are given. Other world areas require these basic immunizations and, in addition, the immunizations indicated by letters: Area Y (for yellow fever); Area CT (for cholera and typhus); Area T (for typhus); and Area YCT (for yellow fever, cholera and typhus). Solid black denotes yellow fever-receptive areas in the United States.



UNIFORM FOREIGN DUTY TOURS ESTABLISHED

FOLLOWING a year of conferences, the Military Services have reached agreement as to desirable lengths of foreign duty tours for Armed Services personnel. Uniform foreign duty tours in more than 100 overseas areas have been approved, effective 1 July 1958. The thirteen month tour in Korea represents a reduction of the time formerly required of Army personnel in that area, and is regarded as a step toward minimizing hardships of oversea service.

In general, the standard pattern calls for a 36-month service for those accompanied by dependents in more favorable areas, and 24-months for those not so accompanied. In areas where living conditions are less favorable, tours of shorter length, depending on local conditions, have been established.

The following table summarizes the new foreign service tours by country and area:

	TOUR IN MONTHS	
	With Dependents	*All Others*
AFRICA AND MIDDLE EAST AREA		
Egypt	36	24
Ethiopia (except Eritrea)	24	18
Eritrea (Asmara)	30	18
Iran (except Teheran)	24	12
Teheran	24	18
Iraq	24	18
Liberia	36	24
Lybia (except Tripoli)	30	18
Tripoli	36	24
Morocco		
Ben Guerrie Area	24	12
Casablanca Area Including Nouasseur	36	24
Marrakech Area	30	18
Port Lyautey Area including Boul Haut, Rabat and Rabat Sale	30	18
Sidi Slimane	24	12
Pakistan	24	18
Saudi Arabia (except Dhahran)	18	12
Dhahran	24	18
Turkey		
Ankara, Istanbul and Izmir	30	18
Adana, Sile, Golcuk and Karamousal	24	18
UN Truce Supervisory Organization Palestine	24	18

	TOUR IN MONTHS	
	With Dependents	*All Others*
EUROPE		
Austria	36	24
Belgium	36	24
Crete	24	18
Denmark	36	24
France	36	24
Germany	36	24
Greece	30	18
Italy	36	24
Malta	24	12
Netherlands	36	24
Norway	36	24
Portugal	36	24
Spain	36	24
United Kingdom	36	24
Yugoslavia	24	18
FAR EAST AND PACIFIC AREA		
Australia	36	24
Cambodia	24	12
Eniwetok	NA*	12
Guam	24	18
Hawaiian Islands	36	24
Iwo Jima	NA*	12
Johnston Island	NA*	12
Japan	36	24
Korea	24	13
Kwajalein	18	12
Midway Islands	18	12
Philippine Islands	24	18
Ryukyu Islands	30	18
Saipan	24	18
Taiwan	24	15

*Not applicable

FAR EAST AND PACIFIC AREA (continued)		
Thailand (excluding Bangkok)	NA*	12
Bangkok	24	18
Viet-Nam (excluding Saigon)	24	12
Saigon	24	14

NORTH AMERICA-NORTH ATLANTIC AREA		
Alaska		
Aleutian Peninsula and Islands West of 162d Meridian Including Adak, Attu, and Dutch Harbor	18	12
Anchorage Area Including Elmendorf AFB and Fort Richardson	36	24
Big Delta Area Including Fort Greely	24	18
Fairbanks Area Including Eielson AFB and Ladd AFB	30	18
Juneau Area	24	18
Kenai-Whittier Area Including Wildwood Station	24	18
Nome	24	12
Fire Island	NA*	18
Kodiak Island	24	12
Point Barrow Area	18	12
Azores	24	18
Canada		
Labrador (excluding Goose Bay)	24	12
Goose Bay	24	18
Metropolitan Areas	36	24
Newfoundland		
Argentia	24	18
St. Johns and Stephensville	36	24
Other Areas	24	12
Greenland	24	12
Iceland	24	12
Mexico	36	24

SOUTH AMERICAN AND CARIBBEAN AREA		
Antigua	24	18
Anguilla	24	18
Argentina	36	24
Aruba	24	18
Bermuda	36	24
Bolivia	24	18
Brazil	36	24
Chile	36	24
Colombia	36	24
Cuba		
Guantanamo	24	18
Havana	36	24
Dominican Republic	36	24
Ecuador	24	18
Eleuthera	24	18
El Salvador	36	24
Guatemala	36	24
Haiti	24	18
Honduras	24	18
Nicaragua	24	18
Panama Including Canal Zone	36	24
Paraguay	24	18
Peru	36	24
Puerto Rico	36	24
St. Lucia	NA*	12
Trinidad	24	18
Uruguay	36	24
Venezuela	36	24

*Not applicable

ARMY POLICIES ON PERMANENT CHANGE OF STATION

DESIGNED to reduce nonessential movement and thereby achieve greater stabilization and economy of funds, newly published Army Regulations 614-8 set forth in one publication the current policies designed to reduce permanent change of station moves. They do not apply in times of war or national emergency.

Briefly, the new Regulations state that personnel will not be reassigned solely for the purpose of change of assignment, or because of completion of a stabilized tour. Individuals normally will not be moved during the last year of a term of service, or within a year of mandatory retirement. Those in overseas commands will be moved only for compelling military reasons during the fiscal year in which they are scheduled to return to the United States. Approval for return must be obtained from the Secretary of the Army when an individual has completed an intra-theater permanent change of station move during the fiscal year of return. As far as possible, faculty replacement at Service Schools will be obtained from members of graduating classes. Personnel on stabilized tours will not be moved except as provided in AR 614-5.

Commanders and heads of agencies are to establish stringent controls necessary to implement policies listed in the Regulations.

Added strength for the Regular Army officer corps—

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By Lieutenant Colonel George D. Styer

THE WIND-UP of Regular Army Augmentation Board activities in late spring of 1958 marked the ending of the first phase of the Regular Army augmentation program. It also provided a convenient pivot point for assessment of a program of vital importance to the long-range strength and vitality of the Regular Army officer corps.

Under provisions of the Armed Forces Regular Officer Augmentation Act of 1956 (Public Law 737—84th Congress), the Army was authorized to increase its Regular officer strength to an eventual 49,500 by lateral augmentation—*i.e.,* augmentation throughout the entire promotion structure—and by increasing substantially the annual procurement of new second lieutenants.

At the time of that enactment, Regular Army officer strength stood at approximately 27,800 of a total strength of 30,600 authorized under the Army and Navy Authorization Act of 1949.

In order to prevent the formation of new "humps" and to minimize any existing imbalance in the officer structure, long-range procurement was to be controlled by the establishment of two interim goals. The first goal of 35,640 (72 percent of authorized strength) was

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RETROSPECT

to be reached by 1 July 1958; and the second goal of 39,600 (80 percent of authorized strength) by 1 July 1963. The ultimate goal—49,500 officers—is to be attained some time after 1 July 1963.

A further provision of the Augmentation Act recognized the Army's requirement for highly skilled critical specialists. It authorized direct appointment of a maximum of 200 "highly skilled" individuals meeting certain criteria established by the Secretary of the Army. In this instance, previous military service was not required.

Procurement of these critical specialists was handled under a separate program known as "Project 200." Conducted on a "one-shot" basis, the program based on this portion of the Act expired on 20 July 1958. Under it, 11 highly qualified specialists were appointed. (See "Commissions for Science Specialists," September 1958 DIGEST.)

MAIN POINTS of Department of the Army implementation procedures, and qualifications for consideration for appointment under the Augmentation Act, were spelled out in the October 1956 ARMY INFORMATION DIGEST. Department of the Army Circular 601-26, dated 13 August 1956, with changes, outlines eligibility requirements and detailed procedures for submitting applications.

In general these include, in addition to United States citizenship and physical, moral and security requirements, certain age and education standards. The applicant for augmentation must have a minimum of two years of college or its equivalent, and must be able to complete twenty years active Federal commissioned service in the Army prior to reaching his 55th birthday.

He must be at least 20 years old on the date of application and not over 34 years for an officer appointed as chaplain; 32 years for an officer appointed in the Veterinary Corps or the Judge Advocate General's Corps; 30 years for an officer appointed in the Medical Service Corps; or 27 years for officers appointed in other branches. (These maximum ages could be increased by virtue of certain service credits and/or constructive credit.)

BOARD ACTION

TO implement the program, a Regular Army Officer Augmentation Board was established under provisions of DA Circular 601-26 as a Class II activity under jurisdiction of The Adjutant General. The Board consisted of a general officer as President, and 60 colonels of the various arms and services.

After a thorough orientation and briefing, the Board convened to select the best qualified applicants. Its first action was to screen the records of approximately 20,000 applicants. This was accomplished by creating 12 screening panels of 5 officers each. The records of each applicant were reviewed, evaluated, and scored independently by the three panel members representing the individual's branch choice. Their determinations were based on judgment of the applicant's entire record rather than on hard and fast weighing of such factors as education, Officer Efficiency Index rating, Biographical Information Blank, local interview score, and the like.

Among the records available to the Board and considered in the screening process were transcripts of college or other educational records, birth certificate and photograph, local board interview and Biographical Information Blank (where applicable), evaluation by two superiors, efficiency report file, and the applicant's 201 file.

AFTER initial screening of 19,267 applicants, about half were considered by the Board as fully qualified for Regular Army appointment. These were placed in appropriate year groups and referred to panels of five officers for further evaluation. This independent scoring procedure made it possible to prepare a valid relative order of merit for each year group.

Final objective of the Board was to select applicants and designate

Distributions of Regular Army Appointments by Permanent Grade and Branch

(Data compiled as of 1 July 1958)

	Total	Colonel	Lt. Col.	Major	Captain	1st Lt.	2d Lt.
Total	5531	2	80	750	2025	1226	1448
Armor	398		7	50	119	88	134
Artillery	1323		14	142	410	340	417
Infantry	842	1	9	160	330	150	192
Adjutant General	280		1	42	151	48	38
Chemical	144		2	14	46	45	37
Engineers	302		4	25	86	49	138
Finance	128		2	22	44	34	26
Medical Service	302		16	39	134	44	69
Military Police	176		1	21	69	47	38
Ordnance	388		5	49	150	101	83
Quartermaster	262		4	63	95	40	60
Signal	500	1	7	59	210	105	118
Transportation	345		1	30	130	100	84
Judge Advocate	37		7	14	8	8	
WAC	49			4	15	16	14
Chaplain	55			16	28	11	

the branch in which appointed. This was done by a panel of officers representing each of the 16 branches. The panel considered only one year group at a time. Each panel member was provided with a tabulation showing the number of vacancies for his branch and the number of qualified applicants, by score, who had designated that specific branch as first choice. (In addition to designating three choices of branch, many applicants indicated they would accept appointment in any branch.)

Every effort was made to select applicants for their first choice of branch, providing a branch vacancy existed. When an applicant was not selected by his first choice branch or when no vacancy existed, his application was passed on to the representative of his second and third choice. Again, if not selected by any branch of his choice or if no vacancies existed, all other branch representatives on the panel reviewed the record.

Intensive efforts were made to select those applicants best qualified for appointment as well as those having the greatest potential for a successful Regular Army career. It was considered that most junior officers with up to eight years service were qualified for other branches or could be retrained in a relatively short time.

Panel members considered applicants in relative order of merit, starting with the highest score. Order of merit scores were not absolute, nor were they sufficiently accurate to permit a specific cut-off score. The scores, however, did give an order in which applicants could be considered in filling vacancies.

The ultimate objective of each branch representative was to accept applicants whose record of performance, civilian and military scholastic attainments, physical abilities and personal characteristics, placed them *above the average* of officers of their grade and length of service.

> ***"The Augmentation Program has been successful in reducing the 'humps and valleys' of the promotion list to a degree, and has created a broad foundation at the base of the service structure for future procurement."***

WIDE variances in vacancies both by year group and branch created difficult problems for the Board. Because of this imbalance many officers were offered appointment in branches that might not have been indicated as a preference. This procedure permitted extension of appointments to officers who otherwise would have been denied the opportunity because of lack of vacancies in the branch or branches of choice in a particular year group.

Additional applicants who merited selection were brought in by "rolling back" from their normal year group to a year group with more vacancies. The maximum "roll back" authorized was two years. In this manner a substantial number of officers in the tight 1942 and 1943 year groups were selected and placed in the less critical 1944 through 1947 year groups. In addition to permitting the selection of the greater number of applicants, some smoothing out of the "humps and valleys" was possible.

PROBLEMS ENCOUNTERED

THE augmentation program was not without certain problem areas —the greatest single one being the lack of widespread response to the program. Initial estimates were that 40,000 applicants would compete for the announced goal of 7,200 appointments. Actually, approximately 20,000 applications were received and their distribution as far as year groups were concerned was far from the spread originally hoped for.

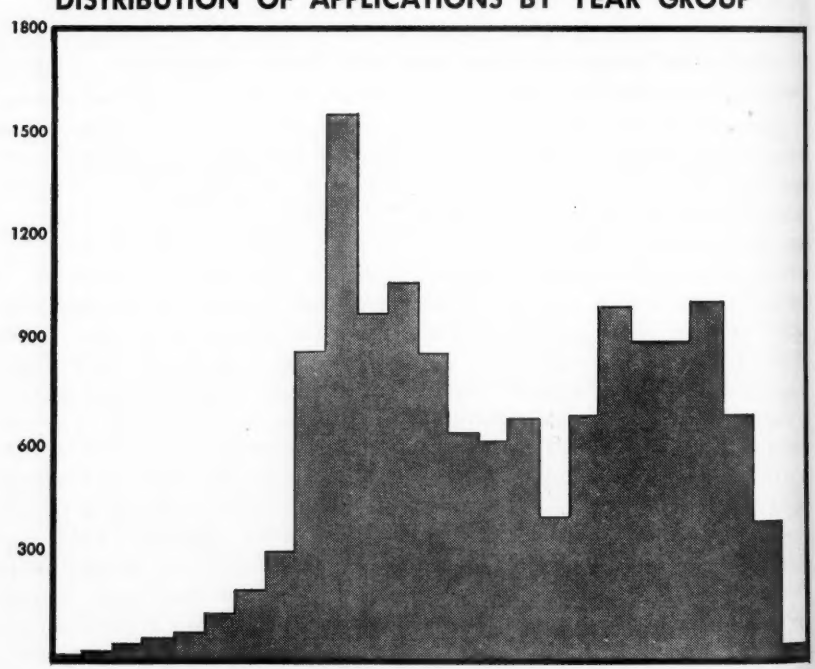
This less-than-estimated response can be attributed to several factors. Probably the foremost reason was the fact that the available pool had been fairly well combed through in certain year groups during the 1946-1947 Augmentation Program and the competitive tour programs. Many officers in the higher age and service brackets refrained from applying because of the existing opportunity to retire at 20 years service, and did not want to incur the additional service obligation as Regular officers.

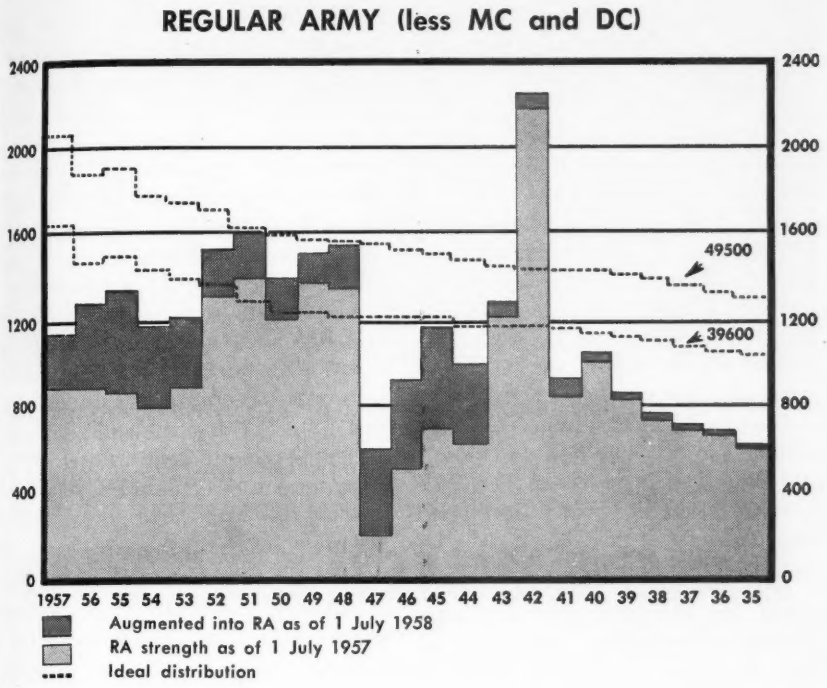
At the other end of the age and service spectrum, the young officer was perhaps influenced by financial rewards and opportunities offered by a prospering civilian economy or by personal apathy toward a career as a Regular officer. This curtailed response is expected to yield approximately 5,000 appointments as compared with the original goal of 7,200.

PROJECT 200

AS a special adjunct of the Augmentation Program, the Congress authorized the direct appointment in the Regular Army of 200 highly

DISTRIBUTION OF APPLICATIONS BY YEAR GROUP





critical specialists with advance standing on the promotion list without regard to prior military service. This phase of the Augmentation Program—known as Project 200—was designed to attract individuals with specific skills. Required to be completed within two years of passage of the Act, the program was handled separately from other phases of the Augmentation Program.

Broad fields of specialization and criteria for appointment—including appropriate college degrees and post-graduate experience—were established by the Department of the Army and approved by the President.

The Act permitted the granting of up to eight years "service credit" to individuals who had not previously performed active duty as a commissioned officer. Thus it was possible to offer Regular Army appointment in a grade and pay status more in keeping with the equivalent status and pay prevailing in civilian life.

Since Project 200 was designed to procure specialists from civil life, publicity was directed at colleges and universities, professional societies, and placement organizations. In addition, the Secretary of the Army enlisted the support of his civilian aides in further publicizing the program.

The Project 200 selection board was wholly separate from the board employed for the Augmentation Program. Known as the Regular Army Specialist Selection Board, it used different selection criteria and was not bound by year group quotas as was the regular program.

Response to Project 200 was slow initially, with many applicants deferring formal application until the program was well under way. Approximately 200 applicants were considered; from this number a final selection of twenty-eight was made, and eleven appointments were realized. Almost all of the eleven appointed have completed some of the schooling required for the next higher degree and have impressive records in their fields of specialization.

Careers of individuals appointed under Project 200 will be closely monitored to insure that their particular talents are fully developed and utilized.

ROUND-UP RESULTS

IN RETROSPECT, the Augmentation Program will result in the addition laterally of approximately 5,000 Regular officers. Included will be a handful with exceptional scientific skills.

The Augmentation Program has been successful in reducing the "humps and valleys" of the promotion list to a degree, and has created a broad foundation at the base of the service structure for future procurement. When final acceptances of tendered appointments are recorded, it is anticipated that the Regular Army officer corps will still be approximately 2,500 officers short of the 35,640 goal planned for 1 July 1958.

Currently, the Army continues to augment the Regular officer corps both laterally and at the base through procurement under AR 601-100, DA Circular 601-12, and other pertinent regulations. This procurement is planned so as to reach or approach the 39,600 Regular officer corps projected by 1 July 1963 or as soon thereafter as possible. This will be achieved principally by increasing the annual procurement of second lieutenants with no previous service and, to a lesser extent, by filling the year groups throughout the entire structure in order to provide a more uniform distribution in all year groups.

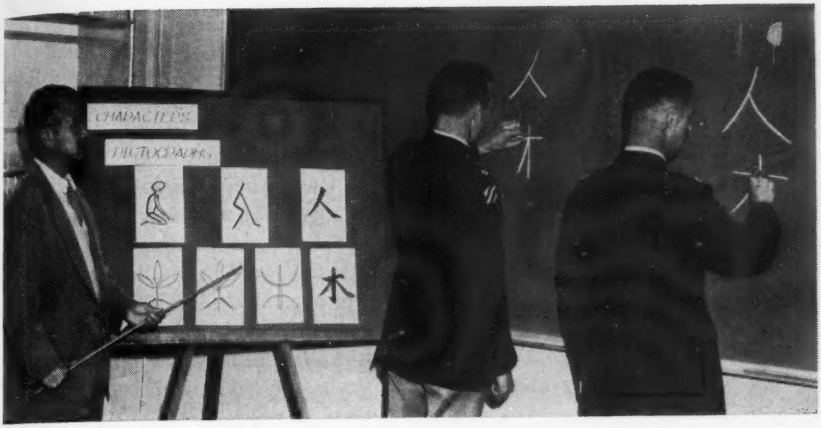
Breakthrough in Noise Reduction

Two negatives make a positive—and sometimes two noises may make a silence, or at least reduce the objectionable noise which interferes with communications.

Using this principle, an experimental electronic earphone has been developed for Army use in what is considered a major breakthrough in noise reduction. The device shuts out loud noises which interfere with combat communications by adding more noise—just as loud, but opposite in phase—in a special earpiece. When the two sound waves meet in the earcup, they tend to cancel each other out, thus greatly reducing the noise level so that a loud roar is muffled to a whisper.

Developed by the U. S. Army Signal Research and Development Laboratory, Fort Monmouth, New Jersey and Radio Corporation of America, Camden, New Jersey, the earphones are expected to find wide use in tanks and aircraft where noise is a major problem to communications. They also are expected to have many commercial uses.

The earpieces work in conjunction with a special electronic inverter and amplifier unit which could be made small enough to fit into a pocket. The system cuts low pitched sounds down to as little as a tenth of their original volume; higher pitched sounds are trapped by special foam cushioning.



Linguistic training with a rapid-fire, dramatic impact is provided by the Army Language School's

OPERATION JABBER

Major Thomas A. Duke, Jr.

JANGLING telephones—liaison officers barking into them in German, Spanish, French—huge wall maps being filled in with symbols—quiet but tense figures watching in the background—all this does not seem like a race and final examination combined. Yet that is exactly what is underway at the Army Language School at the Presidio of Monterey, California.

It is all part of a Command Post Exercise (CPX), called Operation Jabber, which marks a kind of final examination given at the end of five months of the six-month language courses in the Romanic-Germanic language division of the school. It is part of the Army's linguistic preparation to deal with a potential aggressor through a program that provides selected United States officers and enlisted men with the ability to communicate with members of allied armies as freely as though talking with fellow Americans.

EVERY six months a fictitious "enemy"—composed of members of each of the language classes, carefully coached in their background stories and equipped with various papers such as pay records, identity cards, and the like—"invades" the scenic Monterey Peninsula. They are "captured" by other members of the classes and interrogated in the language under study. In the two hours allotted,

MAJOR THOMAS A. DUKE, JR., Artillery, is Director, Operations and Training, U. S. Army Language School, Monterey, California

future Army interpreters and translators try to determine the tactical plans of the invaders and to locate enemy concentrations by questioning, and sifting of documents.

Command posts and interrogation points are classrooms. The examination consists of realistic practice in the sort of rapid communication in foreign languages that the students may some day expect when working in liaison with army units of allied countries.

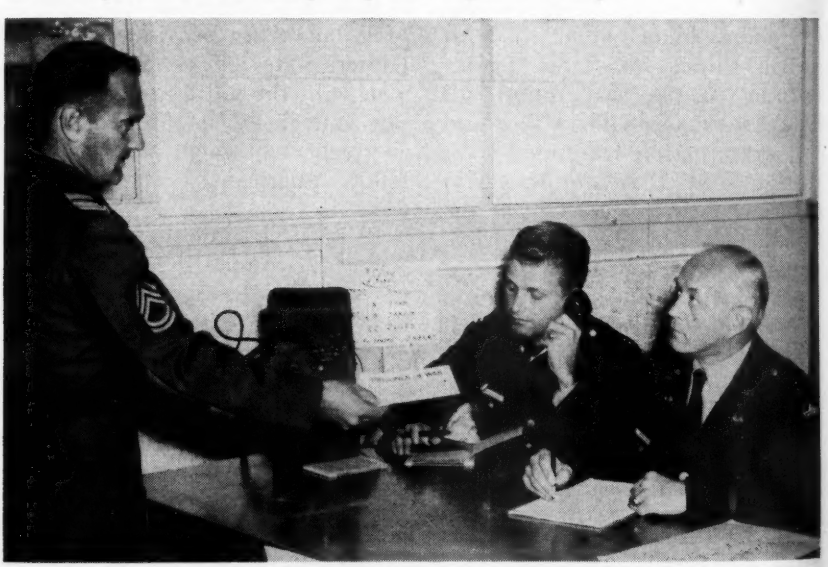
Roles in this deadly serious academic problem are divided among the students. Some play the parts of prisoners or refugees, memorizing identical stories in which are buried scraps of vital information. Some are assigned as interrogators and translators in the allied army defending the Peninsula. When information secured by the interrogators is pieced together, it is supposed to give allied units an idea of where the enemy is and what he is doing. It is up to the interrogators and translators to dig out the answers. The prisoners and refugees are instructed to answer the questions asked, but never to volunteer any information.

At the end of the exercise, results are compared to see which language class has sifted out the most information, and pieced together the most accurate picture of the enemy. Thus the exercise becomes a race as well as an exam.

THE prisoners are coached in frustrating the interrogators and, in the spirit of competition, become highly resourceful at circumvention.

In one room, for example, an interrogator is questioning a "captured enemy" soldier. In fluent French he establishes that the man was taken just after he had helped lay a mine field. Further questioning brings out the

Command posts and interrogation points are set up in classrooms, where students practice their newly acquired linguistic ability.



A "captured" Aggressor is brought to the interrogation point . . .

character of the field, its size, and —although the enemy claims he knows nothing of map reading and so cannot possibly pinpoint the spot on a map—pretty well establishes the location.

In another room an interpreter is poring over captured documents. Typical is a letter that the captured aggressor had been writing home when he was taken. From it the investigator pieces together one or two bits of information concerning the size of the enemy unit, its training and the state of its morale.

As the interrogations and examination of papers goes on, translators make reports to a message center sergeant who logs the information. Soldiers in the classrooms take calls and relay messages to officers who sit poised over tactical maps, occasionally marking in military symbols.

NERVE center for the entire operation is the "office of the commanding general." Here liaison officers maintain three large wall maps, one for each of the departments participating in the problem. Each language team calls in the information as quickly as acquired. The liaison officer enters this information on the maps in the form of symbols.

Each department tries to outdo the other in speed and accuracy. As the exercise progresses, language instructors collect to watch the late stages of the contest. They hover over the maps, anxiously noting the progress made by their own students and their competitors.

. . . and is put through detailed questioning.

Swiftly, translators examine papers he carried . . .

. . . then relay all information to an intelligence team.

They smile with ill-concealed delight when their students are first to call in reports.

The race usually finishes in a dead heat. All units acquire essentially the same information, although not always in the same order or sequence. While the time element involved lends an air of competition and maintains interest among the students, the main purpose is not merely a speed test.

AS explained by Colonel Walter E. Kraus, commandant of the school, the problem of bridging the linguistic gap between allies—present and potential—is a huge one. So is the problem of understanding one another.

"Throughout much of the world we are engaged with the Communists in a struggle for minds. In order to win in this contest we must achieve improved understanding among people everywhere. This means more than propaganda. It means personal contact and liaison with people of other lands. America's position can never be made clear if our representatives, civilian and military, cannot speak the language of the country they are visiting.

"The lack of skilled linguists is nearly as grave as that of the highly publicized shortage of engineers and technicians," Colonel Kraus points out.

The truth of this statement is borne out by the fact that today United States is allied with more than 40 nations, assisting in training of some 200 allied divisions, and maintaining relatively large troop units of its own on guard in Europe and Asia.

Today more than forty United States Army advisory groups and training missions are in operation. The Army furnishes courses of instruction, mobile training teams and technical representatives in support of allied military units. To be truly effective, these units must achieve maximum communication at every level of operation.

Since this obviously involves a knowledge of other languages, the degree of success depends to a great extent upon the degree of understanding. This situation demands a continuing supply of competent linguists if present efforts are to attain peak efficiency and support.

CURRENTLY the Army Language School offers training in 28 foreign tongues. The School is open to men of all ranks from colonel to private. Personnel are trained in languages for such duties as military attaches, key members of missions and advisory groups, and intelligence specialists.

Now in its seventeenth year, the school has trained 8,000 students to speak, read and write Japanese, about 5,000 in Russian, and about a thousand in German. Many more qualified linguists have been graduated in Chinese, Korean, Arabic, Turkish, French, Romanian, Czech, Vietnamese and Thai as well as other tongues.

Thus—through such intensive school training and exercises like Operation Jabber—the Army is not only preparing linguistically to deal with a potential aggressor, but is engaged in a program that will provide selected soldiers with the ability to communicate with friends and allies.

FLIGHT OPERATIONS CENTER FOR TACTICAL ARMY AIRCRAFT

EMPHASIZING the important defense role of Army Aviation, a highly mobile Flight Operations Center (FOC) has been developed to control Army aircraft traffic in a combat area. The unit was evolved by U. S. Army Signal Research and Development Laboratory, Fort Monmouth, New Jersey.

Although developed for tactical use in battle zones, Army Signal Corps experts believe the new trailer-mounted system may provide new ideas for other military and civil aviation authorities working toward safer and faster flight control required by the jet age.

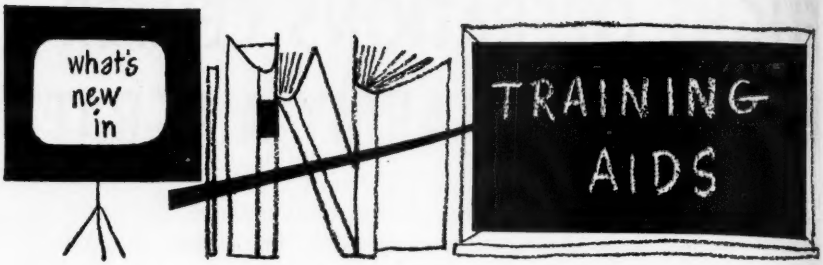
The new system is designed to regulate Army aircraft en route between points, rather than at landing and takeoff. A pilot's flight plan is cleared before takeoff, and then the FOC provides him with in-flight assistance from origin to destination.

The control caravan consists of a 30-foot operations van, a radio equipment shelter, and two trailer-mounted Diesel generators. All units are capable of being air-lifted. The control van is waterproof, and can be floated ashore from a ship. It also is heat- and air-conditioned to allow operation efficiently from 60° below zero up to 140° above.

Working with other control centers and ground installations, the control staff keeps tabs on aircraft at all times, by keeping in touch with pilots in the air, compiling information on both friendly and hostile aircraft, and on enemy ground action. Close liaison with antiaircraft missile and gun batteries is a critical function. Weather reports are relayed to aircraft, and those disabled by storms or enemy action are directed to the nearest landing strip.

The flight center commander, with radio and telephone panel at his fingertips, sits on a raised platform commanding a clear view of the entire control room. The flight controller and an assistant man a ten-foot traffic control console. Information from this console is transferred to a plotting board on which magnetic aircraft symbols are shifted to provide a continuous flight picture of the area's whole moving aerial skein.

Aerial routes are laid out on plotting board for a planned tactical operation.



Keep your organization current with the latest training materials by referring to this section in each issue.

TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned *NOT* to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlets 310-1, 310-3 or 310-4:

Combat Intelligence, Battle Group, Combat Command, and Smaller Units. FM 30-7 is designed to furnish guidance to commanders, staff officers, and others concerned with production and utilization of combat intelligence in units below division level.

Military Intelligence Battalion, Field Army. FM 30-9 furnishes guidance pertaining to operations and employment of the Military Intelligence Battalion, Field Army, and its organic elements. A classified supplement to this manual is also being published.

Tactical Cover and Deception (U). FM 31-40 provides a guide for commanders and staff officers at Army, corps, and division level for planning and conducting cover and deception operations.

Air Defense Artillery Guided Missile Battalion, Nike Hercules. FM 44-( ) presents principles and techniques for utilizing the Nike Hercules air defense artillery guided missile system in an air defense mission and in its additional surface-to-surface capability. A classified supplement is also being published.

Helicopter External Load Operations. TC 1-( ) provides initial guidance for all units concerned with techniques and procedures utilized in transporting material externally by helicopter.

Prediction of Fallout and Radiological Monitoring and Survey. TC 101-1 provides interim guidance for commanders and staff on this subject.

Aerial Delivery of Supplies and Equipment: Rigging the 105mm Howitzer on 15- and 13½- Foot Platform. TM 10-500-19 specifies the air-type equipment, techniques, and procedures necessary to prepare and rig the 105mm Howitzer M2A1 with Carriage M2A1 or M2A2 for aerial delivery in temperate and arctic zones.

Engineer Operations and Logistics. ROTCM 145-5-4 is designed for use with ROTCM's 145-80 and 145-90 by senior division engineer ROTC students.

Chemical Company, Combat Support. TC 3-( ) provides basic information and guidance on activation, organization, training, and employment of Chemical Company, Combat Support, TOE 3-7D.

Harbor Craft Crewman's Handbook. TM 55-501 is a guide for crew members of the U. S. Army Transportation Corps harbor craft fleet. It will supersede TM 55-370, "Operation of Small Boats and Harbor Craft," dated 6 June 1950.

Revisions scheduled for publication:

FM 21-40, "Small Unit Procedures in Atomic, Biological and Chemical Warfare"—revision of 1954 edition.

FM 21-41, "Soldiers' Handbook for Atomic, Biological, and Chemical Warfare"—revision of 1953 edition.

FM 31-60, "River-Crossing Operations"—revision of 1955 edition.

TM 57-220, "Technical Training of Parachutists,"—revision of 1956 edition.

ROTCM 145-100, "Service Orientation"—revision of 1954 edition.

FM 6-140, "The Field Artillery Battery"—revision of 1950 edition.

FM 19-15, "Civil Disturbances and Disasters"—revision of 1952 edition.

FM 22-5, "Drills and Ceremonies"—revision of 1956 edition.

TM 6-300-59, "Army Ephemeris"—revision of 1957 edition.

ROTCM 145-85, "Military Law and Boards of Officers"—revision of DA Pamphlet 145-1, September 1951.

NOTE: The following two ROTCM's will supersede ROTCM 145-11-3, dated 1 November 1955:

ROTCM 145-11-1, "Military Science III —Signal Corps"—revision of 1955 edition.

ROTCM 145-11-2, "Military Science IV—Signal Corps"—revision of 1955 edition.

TRAINING AIDS

Training Films recently released:

TF 3-1860, "Individual and Unit Decontamination of Toxic Chemical Agents."

TF 3-2593, "Nerve Gases—Part I—Field Recognition and Self-aid Procedures."

TF 8-2539, "Control of Hemorrhage."

TF 9-2572, "Transportation of Ammunition—Part IV—by Aircraft."

TF 10-2595, "Maintenance of a Petroleum Distribution System."

TF 11-2489, "Radio Set AN/GRC-26( ) Part I—Characteristics, Use and Modes of Operation."

TF 16-2520, "Common Sense."

TF 16-2521, "Clean Speech."

TF 16-2695, "The Character Guidance Program."

TF 30-1890, "Security—Part I—Guarding Against Espionage in Military Installations."

TF 44-2584, "Nike Ajax Battery, Orientation and Synchronization—Part III-A —Collimation of Tracking Antenna by Data Dial Method."

TF 11-2552, "Introduction to Automatic Data Processing."

TF 41-2592, "Military Government in an Enemy City—Part IV—Civilian Evacuation."

TF 55-2557, "Automotive Preventive Maintenance, After Operation."

TF 55-2558, "Automotive Preventive Maintenance, Before the Operation."

TF 55-2559, "Automotive Preventive Maintenance, During the Operation, and at the Halt."

MF 5-8954, "The Big Picture—The Engineer Supply Mission."

MF 16-7962, "Jesus and the Lepers."

MF 16-8496, "Second Missionary Journey —(The Life of St Paul)."

MF 16-8945, "Last Journey to Jerusalem."

MF 16-8946, "Thirty Pieces of Silver."

MF 16-8947, "The Upper Room."

MF 20-8944, "The Big Picture—Operation Lifeline."

MF 20-8948, "Defensive Driving Series—How to Follow Safely."

MF 20-8949, "Don't Be a Sitting Duck."

MF 20-8950, "Defensive Driving Series—Stay Right Stay Safe."

MF 20-8951, "Defensive Driving Series—What Right-of-Way?"

MF 30-8763, "Strategic Intelligence School Area Film Studies—Number 7—South Asia."

MF 30-8901, "Strategic Intelligence School Area Films Studies—Number 9—Latin America."

GF 10-35, "Cooking Methods and Terms."

GF 11-39, "Manual Telephone Central Office AN/TTC-7."

SFS 5-121, "Soviet TMD-B Wooden Box Mine."

SFS 5-139, "M-19 Antitank Non-Metallic Mine."

SFS 5-147, "Air Compressor 210 CFM."

SFS 8-242, "Veterinary Surveillance Inspection of Perishable Subsistence."

SFS 38-33, "Packaging and Packing—Methods of Preservation."

AFIF 226, "I&E Sportsreel."

AFIF 227, "I&E Sportsreel."

AFSM 558, "I&E Screen Magazine—Issue No. 558."

AFSM 559, "Shipment to Saratoga."

TF 9-2603, "Automotive Trouble Shooting—Part XIX—Air Hydraulic Brake System, Principles of Operations."

DA Transparencies recently distributed:

T 9-2-1, "Heavy Gun, Lifting, Front Truck, M249."

T 9-2-1A, "Heavy Gun, Lifting, Rear Truck, M250."

T 9-2-1B, "Gun, 280mm, in Firing Position."

T 9-2-3, "Types of Artillery Weapons."

T 9-2-7, "Gun, 37mm, M1916, and Exterior Mounts."

T 9-2-9, "Gun, 90mm, M2; and Mount Gun, Antiaircraft 90mm, M2."

T 9-2-11, "Rifle, 75mm, M20."

T 9-2-12, "Howitzer, 8-Inch, M2; and Carriage, Howitzer, 8-Inch, M."

T 9-2-13, "Howitzer, Pack, 75mm, M1A1; and Carriage, Howitzer, (Pack), 75mm, M8."

T 9-2-15, "Breech Bore Sight in Position (General Application)."

T 9-2-16, "Muzzle Bore Sight in Position (General Application)."

T 9-2-17, "Combination Fuze Setter-Rammer, M20 with Motor Drive Controls."

T 9-2-18, "105mm Rifle M27 and 105mm Rifle Mount M75 for ¼ ton, 4x4 Utility Truck M38."

T 9-2-19, "70mm Gun T124 and 76mm Gun Carriage T 66 in Firing Position at Maximum Elevation and Traverse."

T 9-2-20, "Gun, 155mm, Self-Propelled, T97, Right Side View."

ARMY EXTENSION COURSES

New Subcourses recently published:

Slide Rule II. Engr Subcourse 126, U. S. Army Engineer School. Use of the more advanced scales and operations of the slide rule; fundamentals of logarithms and antilogarithms and their application; operations of sines, cosines, tangents in solving trigonometric problems.

Revisions recently published:

Enemy Prisoners of War and Civilian Internees. PMG Subcourse 25, The Provost Marshal General School. Revision of 1947 edition.

Traffic Control III. PMG Subcourse 28, The Provost Marshal General School. Revision of 1952 edition.

Investigative Methods and Preservation of Evidence. PMG Subcourse 6, The Provost Marshal General School. Revision of 1952 edition.

Postal I. TAG Subcourse 28, The Adjutant General School. Revision of 1953 edition.

Authorized and Unauthorized Absences. TAG Subcourse 47, The Adjutant General School. Revision of 1956 edition.

Infantry Intelligence II, Part II, Inf Subcourse 57, U. S. Army Infantry School. Revision of 1955 edition.

Organization and Operation of Prisoner of War Information Bureaus, PMG Subcourse 80, The Provost Marshal General School. Revision of 1947 edition.

Town Patrolling. PMG Subcourse 18, The Provost Marshal General School. Revision of 1949 edition.

Military Applications of Radar, Sig Subcourse 23, U. S. Army Signal School. Revision of the 1955 edition.

Military Applications of Television. Sig Subcourse 22, U. S. Army Signal School. Revision of 1955 edition.

Training and Methods of Instruction I. Common Subcourse 20. Revision of 1947 edition.

Expert Infantryman Qualifications

TRAINING and tests for qualifications for Expert Infantryman are set forth in newly published AR 600-73. Tests are to be conducted by a board of three infantry officers, plus necessary noncommissioned officer assistants for each event, selected from units not participating in the tests. To take the tests, an individual must have a character rating of "excellent" and must qualify as sharpshooter or better with his primary individual weapons, or first class gunner or better with his crew-served weapon, and as expert with the bayonet. He must also qualify in field stripping and assembling his primary individual weapon and one crew-served weapon.

Tests are given on military courtesy and discipline; first aid; field sanitation and military hygiene; demolitions, mines and booby traps; patrolling; map reading and compass course; military intelligence; adjustment of artillery and mortar fire; individual cover and camouflage; basic signal communication; hand grenade; chemical-biological-radiological warfare; and physical fitness.

PARAGRAPHS from the Pentagon and the Field

Explorers Log

By the end of July the first U. S. scientific earth satellite, Explorer I, had traveled some 65,600,000 miles to mark its first six months in outer space. Scientists expect that it will remain in outer space for as long as seven years. Although its transmitters now are silent, it continues to yield valuable scientific data while travelling at a velocity approaching 18,000 miles an hour.

Explorer IV, which was launched 26 July with a modified Jupiter C rocket, is circling the globe every 110 minutes, and is radioing back information about the radiation belt which was earlier found to exist about 600 miles in space.

Aviation Anniversary

Special ceremonies on 3 September at Fort Myer, Virginia, marked two major milestones in the history of flight—the first military flight by an airplane which co-inventor Orville Wright piloted on 3 September 1908, and the first American air fatality which occurred when the plane crashed during a test flight at Fort Myer two weeks later. Scores of distinguished military representatives and pioneers in American aviation watched the dedication and unveiling of a monument to mark the flight, and a plaque in memory of 1st Lt. Thomas E. Selfridge, who was killed when the plane in which he was a passenger with Mr. Wright crashed. The Army Signal Corps conducted the tests in 1908 which led to first Army orders for aircraft. Surviving members of the 1909 Signal Corps Cadre for Aviation, now retired, attended the ceremonies as well as surviving Army officers who flew prior to 1914.

Aid to Amateur Scientists

Assistance to amateur rocket clubs, missile and other scientific groups is encouraged "within limitations imposed by availability of qualified personnel, adequate facilities, and funds," according to Department of the Army Circular 360-5.

Such assistance has a five-fold objective: to prevent accidents; stimulate interest of the younger generation in scientific and technological fields; keep before the public the Army's eminent role in missile development; develop a potential source of future Army manpower; and assist the Army recruiting program.

Commanders are urged to cooperate with amateur scientific groups by establishing speakers programs, arranging film presentations, disseminating instructional materials, conducting briefings, tours and related activities.

New Weapons on Order

A long step toward modernization of U. S. ground forces was taken recently when Department of the Army was authorized to place orders for quantity production of the new M14 ("Springfield") rifle and the M60 machine gun, which will replace seven of the small arms now existing in Army line units. A total of 70,000 rifles has been authorized in the present Fiscal Year 1959 budget, while 8,835 M60 machine guns will be acquired. The rifle, which fires the new 7.62mm NATO cartridge, replaces the present M1 Garand rifle, the M1 and M2 carbines, the Browning Automatic Rifle (BAR) and the M3 submachine gun. It is capable of selective semi-automatic and full-automatic fire.

USAFI Telecourses

A new resource for use in Armed Forces education—USAFI telecourses—have now been in the field long enough to establish their usefulness in the conduct of the Army's General Education Development Program, according to De-

partment of the Army Circular 621-20.

A telecourse is a series of filmed lecture-demonstrations presented by a qualified teacher, and integrated with a USAFI text and study guide. Intended primarily for use by 16-mm projection in conjunction with group study, they also have proved of value when used on Armed Forces television facilities. The films are not intended to substitute for a qualified teacher when one is available. *"USAFI Telecourses"*, a brochure describing the films and method of procurement, may be obtained by writing to the Director, USAFI, Madison, Wisconsin.

Electronic Measuring Device

Designed to eliminate laborious, time-consuming surveying methods, a lightweight electronic distance measuring device is being tested at the Engineer Research and Devlopment Laboratories, Fort Belvoir, Virginia. Called the Tellurometer, the device uses a master and a remote or "slave" station set up at opposite ends of the line to be measured. The master station transmits a microwave signal which is received and transmitted back by the remote station. Travel time of the radio waves then can be translated into distances. The device can be packed by two men, weighs but 90 pounds—and operating personnel can be trained quickly.

Safety Award

The Department of the Army and the Atomic Energy Commission have won the President's Safety Awards for the best records of safeguarding their employees against public injury in 1957. Established in 1954, the President's Safety Awards are now given annually to the two Federal agencies—one with more than 50,000 civilian employees and the other with less—who have accomplished the most in safety for their employees.

"Ready-to-work" Gloves

Developed for use of guided missile fuel handlers and others who need special protective handware, a new type of glove has been designed by the Quartermaster Research and Engineering Command, Natick, Massachusetts. The new glove is designed to conform to the hand in its normally relaxed "ready-to-work" position, rather than the usual method of making gloves to fit the hand with fingers extended in flat position. Fingers of the new glove are foreshortened so that the wearers' fingers reach the ends of the glove fingers. Made of supported vinyl, they are manufactured by a dipping process using forms evolved after study of anthropometric data by scientists and technologists.

DRESSED for SURVIVAL

Suit for Missile Handlers

PROTECTION against highly corrosive chemicals that must be handled by missile-servicing crews is provided by an improved suit which has been standardized by the Army. Consisting of a coverall, hood, gloves and boots made of a coating of resin-modified butyl rubber over a cotton fabric base, the new ensemble was developed by the Quartermaster Corps. The recently standardized Chemical Corps M-15 mask is used with it. Because heat builds up rapidly within the suit, provision is made for cooling by donning a coverall garment of knit cotton fabric over the suit. The outer coverall can be doused with water which cools by evaporation.

Fire Fighter's Apparel

AN expendable aluminized fire fighter's suit designed and developed by the Quartermaster Corps to protect personnel against injury from heat and fire has proven highly effective in tests conducted by the Army and the U. S. Forest Service. Weighing only one pound ten ounces, the ensemble is made of flame-retardant treated, aluminized kraft paper laminated with a flame-resistant adhesive to a reflective aluminum foil.

Styled much like the Arctic parka and sized to fit over a duty uniform, steel helmet and breathing apparatus, the fire fighter's suit consists of a parka with attached hood, long sleeves and adjustable sleeve closures. Leg sleeves, with adjustable closures similar to Western chaps, are secured by adjustable straps suspended by belt loops from the duty uniform. The face mask, overlapped by the parka hood, is so designed that it is held away from the face. Visibility is provided by a pattern of tiny holes in the mask. Insulated mittens of gauntlet type, with fabric palms slit to permit finger dexterity, are also provided.

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